



Public Health
England

Protecting and improving the nation's health

Sugar Reduction: Achieving the 20%

A technical report outlining progress to date, guidelines for industry, 2015 baseline levels in key foods and next steps

March 2017

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-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Executive summary

In August 2016, government set out its approach to reduce the prevalence of childhood obesity in '*Childhood obesity: a plan for action*'. A key commitment in the plan was to launch a broad, structured sugar reduction programme to remove sugar from everyday products. All sectors of the food and drinks industry are challenged to reduce overall sugar across a range of products that contribute most to children's sugar intakes by at least 20% by 2020, including a 5% reduction in the first year of the programme. This can be achieved through reducing sugar levels in products, reducing portion size, or shifting purchasing towards lower sugar alternatives.

Although the programme focuses on foods consumed by children, the reality is that families eat the same foods. The programme will therefore help all family members to reduce their sugar consumption, thereby reducing the risk of weight gain and the consequences of this to their health. It will also help to reduce health inequalities, as sugar consumption, and the rates of obesity in children, tend to be highest in the most deprived.

The role for Public Health England (PHE) is to advise government on setting the sugar reduction guidelines per 100g of product and the calorie or portion size guidelines for specific single serving products. PHE is committed to publishing the category-specific guidelines for the nine initial categories of food in March 2017 and this report fulfils that commitment.

The report sets out guidelines for all of the food industry on how to achieve the 20% sugar reduction across the top nine categories of food that provide the majority of sugar in the diets of children up to the age of 18 years. The guidelines have been developed following an extensive programme of engagement and consultation with all sectors of the food industry and with non-government organisations (NGOs). Other government departments and the devolved administrations have supported the process.

The guidelines for each food category detailed in this report include:

- overall levels of sugar per 100g of products needed to achieve the 5% and 20% reductions. These are based on sales weighted averages, which take into account both the amount of sugar in a product and the volume of that product sold. This approach should help businesses to focus their reformulation efforts on the top selling products that make the biggest contribution to the sugar levels in each food category
- average and maximum calorie or portion size guidelines for products likely to be consumed by an individual at one time. Again, the biggest selling individual portion

sized products will need to decrease in order to reduce the averages across food categories

This approach allows flexibility for individual products to be above guidance levels as long as overall sugar levels (in grams) or portion sizes (in grams or calories) sold across the category decline.

In *Childhood obesity: A plan for action* PHE was also committed to monitor progress openly and transparently. As a first step in this process we include in this report an assessment of the levels of sugar and calories across the food categories for manufacturers, retailers and the eating out of home sector (such as restaurants, fast food chains, coffee shops, cinemas, pubs and caterers) in 2015. These will provide the baselines against which progress will be monitored.

We will publish two detailed assessments (in March 2018 and March 2020) to determine and advise government on progress against delivering the 5% and 20% reductions. Lighter touch reviews and progress reports at six monthly intervals will be published. All stakeholders, including NGOs and academics, are encouraged to scrutinise these data and reports. Ministers will use this information to determine whether sufficient progress is being made and whether alternative levers need to be considered.

PHE is also committed to helping consumers make healthier choices, which can increase the demand for lower sugar products. We are doing this through activities such as public health social marketing campaigns, including Change4Life. Activities will include raising awareness of the sugar levels in foods and encouragement to swap to lower sugar alternatives.

PHE thanks the businesses and trade associations across all sectors of the food industry, and NGOs, for their constructive engagement during the development of the sugar reduction programme to date.

Introduction

All groups of the population, particularly children, are consuming far too much sugar¹. This increases the risk of excess calorie consumption and weight gain², which, over time, can lead to obesity. The high prevalence of obesity in England, both in children and adults, leads to a range of social and health problems and consequent economic impacts, including major costs to the NHS³. High levels of sugar intake also increase the risk of tooth decay, which is common in English children and is another significant cost to the NHS and families⁴.

PHE's report, '*Sugar Reduction: The evidence for action*' published in October 2015, set out a number of potential actions that could be taken to reduce sugar intakes⁵. One of the most important of these actions was the introduction of a broad, structured and transparently monitored programme of gradual sugar reduction in everyday food and drink across all sectors of the food industry (retailers, manufacturers and the out of home sector including cafes, coffee shops, family and quick service restaurants). This was modelled on the UK's salt reduction programme, which has been successful in driving down population intakes of salt by 11%⁶ and has been described by the World Health Organisation (WHO) as being "world leading". The eating out of home sector was included in '*The evidence for action*', as eating out is now estimated to contribute 20-25% to an adult's energy intakes (depending on the definition for 'out of home')⁷.

In August 2016, Government set out its approach to reduce the prevalence of childhood obesity in *Childhood obesity: a plan for action*⁸. This approach included commissioning PHE to lead a programme of structured and closely monitored sugar reduction and wider reformulation (eg calories, salt and saturated fat).

Another key commitment set out in *Childhood obesity: a plan for action* was the introduction of a soft drinks industry levy, which is being developed by HM Treasury⁸. The levy, which is aimed at the producers and importers of added sugar soft drinks, is designed to encourage producers to reformulate their overall product ranges by reducing added sugar content, helping customers choose low/no added sugar products and by reducing portion size. It is therefore linked to PHE's sugar reduction programme.

The technical guidance, and analysis of baseline levels of sugar in foods for the year 2015 presented in this report, has been developed through a programme of discussion and consultation with industry and non-governmental organisations (NGOs). This process has been supported by other government departments and Scotland, Wales and Northern Ireland. Details of our engagement with stakeholders are published in the accompanying document *Sugar Reduction and Wider Reformulation Programme: Stakeholder engagement: May 2016 to March 2017*.

Approach to sugar reduction and reformulation

Every sector of the food industry (retailers, manufacturers and eating out of home) is challenged to reduce the overall sugar content of the food products that contribute the most sugar to children's intakes by 20% by 2020, including an initial 5% reduction in the first year of the programme (by August 2017),⁸ compared to sugar levels in the foods in 2015. These reductions can be achieved in the following ways:

- reformulating products to lower the levels of sugar present⁹
- reducing the number of calories in, and/or portion size, of products that are likely to be consumed by an individual at one time
- shifting consumer purchasing towards lower/no added sugar products

This approach has been developed following extensive engagement with food industry businesses (see accompanying document *Sugar Reduction and Wider Reformulation Programme: Stakeholder engagement: May 2016 to March 2017*), key learnings from the salt reduction programme⁶, and from the Public Health Responsibility Deal¹⁰. The insight gained from this engagement showed that making a 20% reduction by 2020 would be challenging but achievable; and that the three mechanisms for action included in the programme provided sufficient flexibility for industry.

While the achievement of the 20% reduction by 2020 is the overall focus of the programme, smaller gradual reductions can provide a useful contribution to reducing sugar and calorie consumption, and ultimately towards achieving the overall goal. This applies particularly in those products where sugar reduction per 100g can be more difficult, for example, in chocolate confectionery. Where this is the case, businesses are expected to employ additional mechanisms, such as reducing portion size, to achieve the total 20% reduction. We also recognise that some business will need technological solutions to enable them to achieve sugar reductions, but we encourage industry to consider simple solutions first.

Data from the National Diet and Nutrition Survey¹ show that the foods that contribute most sugar to children's intakes are: biscuits; breakfast cereals; cakes; chocolate confectionery; ice cream, lollies and sorbets; morning goods (eg pastries, buns and waffles); puddings (including pies and tarts); sweet confectionery; sweet spreads and sauces; and yogurt and fromage frais. These form the focus of the current programme. The programme covers all children up to the age of 18 years and therefore includes all food within a category; not just what is produced and marketed specifically for children. Sugary soft drinks are not covered by the sugar reduction programme as these are subject to the soft drinks industry levy, currently being developed by HM Treasury.

Any drinks that fall outside the scope of the levy (currently some milk-based drinks and fruit juices) will become part of the sugar reduction programme later in 2017. We will work with HM Treasury to monitor progress of the levy.

The baseline year for the programme is 2015 (January to December) as this will recognise the efforts of businesses that had made progress in sugar reduction at an earlier stage.

We are clear that sugar reduction should be achieved without increasing the level of saturated fat within a product and, where possible, be accompanied by calorie reduction. Businesses are also expected to continue working towards the 2017 salt reduction targets, developed under the Public Health Responsibility Deal, including those for the eating out of home sector – these are re-published in the accompanying document *Salt Reduction Targets for 2017*.

Definition of sugar

In this report the term 'sugar' is used as shorthand for the 'free sugars' definition set by the Scientific Advisory Committee on Nutrition (SACN). This includes all sugars added to foods plus those naturally present in fruit juices, syrups and honey. It does not include the sugars naturally present in intact fruit and vegetables or milk and dairy products.

Total versus added sugar

It is important that the sugar reduction programme focuses on what is easily measurable in food products to enable effective monitoring. While health concerns relate to the presence of 'free' sugars², that is, those sugars added to foods during manufacture or released during processes such as juicing or pureeing, they are currently not easy to measure and are not declared on the nutrition panel of food labels. Therefore, the programme is focusing predominantly on reducing the levels of *total* sugars. Total sugars are declared on the nutrition panel and this is the data that will be used to track progress towards the 20% reduction target.

Some sugars are naturally occurring in foods such as in milk (lactose) and those contained in whole or dried fruits in some products such as breakfast cereals. These will be considered in more detail later in the report. The vast majority of sugars included in the total sugars figure, however, and present in the products covered by the sugar reduction programme, are added sugars and *not* those that are naturally occurring. The main aim of the programme is to reduce levels of added sugars in foods, and to maintain current levels of whole fruit (and vegetables) in relevant products.

For the purposes of this programme, from here onwards 'free' sugars will be referred to as added sugars.

Definition of added sugar

'Added sugars' includes all monosaccharides and disaccharides *added to foods*. For the purposes of this programme this includes:

- cane sugar, brown sugar, crystalline sucrose, invert sugar, dextrose, molasses
- sugars in honey, treacle and syrups such as malt syrup, fruit syrup, rice malt syrup, corn syrup, high fructose corn syrup, maple syrup, glucose syrup, glucose-fructose syrup
- fructose, sucrose, glucose, lactose, hydrolysed lactose and galactose added as an ingredient

- sugars in nectars such as coconut blossom nectar, date nectar, agave nectar
- sugars in unsweetened fruit juices, fruit juice concentrate
- sugars in fruit purees and jam

Sugar naturally present in milk products, cereals, grains, nuts, seeds and fresh, dried and other processed fruits (other than purees and juices) is *not* considered added sugar.

Substances that are not included in the definition of sugar as it appears on the nutrition panel (ie not analytically sugar) are excluded, for example oligofructose and polyols.

Data used to establish the 2015 baseline and guidelines

A variety of data has been used to inform the decisions around the programme and provide the 2015 baseline levels of sugar per 100g and calories in individual portions for each category. These same data will be used to monitor progress. This section sets this out in brief detail.

The analysis of sugar and calorie levels in key food categories, and more detailed information on the data and methodologies used, can be found at Appendix 1. An analysis of sugar levels in soft drinks is also presented. The contribution of food groups to sugar in the diet is for the UK, all other analyses are for Great Britain.

Contribution of different food categories

Data from the 2012-14 National Diet and Nutrition Survey (NDNS) has been used to estimate the contributions that different food groups make to sugar intakes for children aged 4 to 10 years and 11 to 18 years in the UK¹¹. To provide context, the contribution made to intakes for adults aged 19 to 64 years is also included.

Table 1 summarises the percentage contribution to intakes for each category covered by the programme and soft drinks, based on NDNS food groups. While the contribution of some individual categories may appear small, collectively these account for 50% or more of the sugar in children's diets. The contribution that the foods covered by the programme make to sugar intakes do not align exactly with the NDNS food groups (for example, syrups and honey are included in the NDNS sweet spreads and sauces equivalent category but not in the sugar reduction programme). This means the NDNS analysis may provide a different estimate of the contribution made to intakes.

Table 1: Percentage contribution to total sugar intakes for NDNS food groups relevant to the sugar reduction programme and soft drinks (NDNS 2012-2014)*

Category	Children aged 4-10 years (%)	Children aged 11-18 years (%)	Adults aged 19-64 years (%)
Biscuits	5	5	3
Breakfast cereal	5	5	4
Cakes & morning goods	4	4	4
Chocolate confectionery	5	7	5
Ice cream	4	3	2
Puddings	4	2	2
Sweet confectionery	4	4	1
Sweet spreads	1	1	0.2
Yogurts	3	2	3
Fruit juice and smoothies	7	8	5
Soft drinks	9	20	11
Total	52	60	39

* Totals in the table do not match due to rounding

The NDNS also monitors dietary intakes of sugar (and other nutrients) by age and sex over time. In the longer term, it is expected that the impact of the sugar reduction programme should be reflected in reductions in sugar intakes reported in the NDNS. However, it is likely to take some time due to a time lag between data collection and reporting in the NDNS (data collected between 2014 and 2016 will only be reported in late 2017) and the time taken to reflect changes in sugar levels in products within the nutrient dataset that supports the NDNS.

Data used to establish the baseline levels across different food sectors

The baseline year set out in *Childhood obesity: a plan for action* for the food industry to work from to achieve a 20% sugar reduction is 2015 (January to December). To establish baseline levels of sugar for each product category for 2015, two commercial sets of consumer panel data that cover Great Britain have been used: Kantar Worldpanel¹² for retailers and manufacturers, and NPD Crest¹³ for the out of home sector.

- the Kantar Worldpanel dataset comprises 30,000 households. It is comprehensive and provides data on volume sales (in kilograms/litres) and nutrition information that is largely derived from the nutrition panel on food labels
- the NPD Crest dataset is based on online survey data; each month 18,000 surveys are sent to panel members who record all purchased meals, snacks and beverages

eaten out of home over the previous day. Sales data is measured by number of portions sold in each type of out of home food outlet

The data from the Kantar Worldpanel dataset suggest that soft drinks and the food categories covered by PHE's programme account for 58% of all sugar in foods sold through the retail and manufacturing sectors to be consumed in the home. The remainder comes from foods that are not covered by the sugar reduction programme, some of which will be included in the forthcoming calorie reduction work. It was not possible to provide a similar figure from the data available for the eating out of home sector.

As the NPD Crest data does not include nutrition information for the eating out of home sector, this has been collected from what is currently available online. Generally, however, the amount and quality of nutrition and product data available for the sector, either commercially or publicly (such as on company websites), is low compared with what is available for retailers and manufacturers. To help inform the setting of guidelines for sugar reduction we have called widely for additional data from businesses from the sector to supplement this, with estimates of sugar, calorie and portion size information on key products in 2015.

Metrics produced

Set out in Appendix 1 are two estimates of baseline sugar and calorie levels for each food category for the year 2015 (January to December) covering foods purchased in Great Britain; one focused on retailers and manufacturers and a separate analysis for the eating out of home sector. As we will be working with HM Treasury to monitor progress within soft drinks, data on sugar and calorie levels in soft drinks is also included.

For each category the analysis includes a sales weighted average (sugar content per 100g weighted by volume of sales) and simple average sugar content per 100g and calories per portion (with distribution charts), and the category contribution to sugar intakes. Seasonal products (such as mince pies and Easter eggs) are included in these analyses. An explanation of these terms is included in Appendix 1.

There is no one data source that can be used for the eating out of home sector in the same way that applies to the retail and manufacturing sectors. This means it is not possible to combine the datasets. Analysis on the eating out of home sector has therefore been presented separately to the retail and manufacturing sectors.

The eating out of home data does not include sales volumes for individual businesses or products, meaning sales weighted averages for sugar and calories cannot be calculated in the same way using the same level of detail as for retailers/manufacturers. These have instead been estimated at a food category level using the nutrition data

available for each out of home food outlet type. Discussions are continuing with the eating out of home sector on how to improve the quality of data used in future.

Technical guidance

The overarching aim of the programme is to achieve the 20% reduction in the amount of sugar in each product category by 2020. This same level of reduction should also be achieved by individual businesses in each category that is part of their product portfolio.

A pragmatic approach has been taken in making the final decisions on the structure and details of the programme, taking into account feedback received during the programme of engagement with stakeholders. The final guidelines on sales weighted average sugar levels per 100g, and calorie or portion size guidelines for products that are likely to be consumed by an individual at one time, are given in Table 2. Additional details and notes on the table, and decisions made, are included at Appendix 2.

Category definitions

PHE initially proposed category definitions that were informed by the products included within each product group within the NDNS and Kantar Worldpanel datasets.

While the majority of category definitions and the products included in each have remained unchanged there are three categories where the original proposals have been revised:

- **Breakfast cereals:** this category *includes* no added sugar products such as mueslis, porridge oats and other products. This reflects the majority of comments received on the category and continues to allow businesses to make use of one of the mechanisms for action in shifting purchasing towards lower and no added sugar products
- **Yogurt and fromage frais:** this category *excludes* natural yogurt and unsweetened fromage frais only. Products that contain no added sugar but are sweetened using intense sweeteners are *included* within the category. This reflects the majority of comments received from businesses. This approach still allows businesses to use one of the mechanisms for action in shifting purchasing towards lower or no added sugar flavoured products
- **Sweet confectionery:** this category now *excludes* no added sugar sweets and gum. While this was not something that was originally proposed in the category specific meetings it is something that was highlighted in feedback from industry. The majority of sugar free sweets and gum are mints that are eaten in a different way to other sweets, for example, one or two at a time to freshen breath rather than eating the whole roll or bag

Sub-categories

PHE's initial proposal was that the structure of the sugar reduction programme advocates the use of broad product categories. The primary benefit is that it incentivises a flexible approach by businesses to sugar reduction and will shift the sales weighted average sugar content downwards.

Broad product categories have been retained and have not been split further into sub-categories. The exception to this is the sweet spreads and sauces category where sub-categories have been introduced due to the disparate range of products included.

We are aware that a number of businesses would prefer more specific guidelines for a larger number of subcategories. This work is being taken forward by the British Retail Consortium in discussion with individual businesses. Some leading eating out of home businesses are also developing additional guidance for the sector on how best to work towards achieving the 20% reduction by 2020.

Allowances for naturally occurring sugars

PHE's original proposals did not make any allowances for naturally occurring sugars in products as it was not felt to be necessary. Following feedback received from a number of stakeholders within certain sectors, however, and some further work and consideration by PHE, we have decided to make allowances for the naturally occurring sugar in yogurt; and for the amount of dried fruit in breakfast cereals.

- **Yogurt and fromage frais:** Major businesses in the yogurt sector, relevant trade associations and a research organisation have worked together to devise and agree a figure for naturally occurring lactose in yogurts and fromage frais. This will be applied to products within the category for the sugar reduction programme up to the achievement of the 20% reduction by 2020. The agreed figure is **3.8g lactose per 100g of yogurt or fromage frais**. We have also worked with the same group to agree a calculation method for the category to account for the lactose figure but applies the 20% reduction to total sugar. The 5% and 20% guideline sugar levels included in Table 2 have been calculated on this basis
- **Breakfast cereals:** A number of comments were made by businesses about the need to take account of the sugar present in dried fruit in breakfast cereals, particularly in those products where there is no other sugar added. After further consideration, and following some discussion with relevant industry businesses, up to **10g of sugar in breakfast cereals is allowed if coming from plain dried fruit (sugar coated or treated fruit is excluded)**. In addition, businesses are not encouraged to reduce dried fruit in products to reduce the total sugar content, but are encouraged to move away from using fruit juice or concentrates and sweetened dried fruit

- **All other food products:** A number of comments were made by businesses that manufacture other products that contain naturally occurring lactose (ie those that contain milk or other dairy products such as ice cream, custard, rice pudding) or dried fruit (eg cakes, buns) that an allowance should also be made for these products. After further consideration *no* allowances for these products have been set. The majority of sugar in all other products will be added sugar. While it is acknowledged that, for example, some cakes contain dried fruit, these will still contain added sugar; and those that do include dried fruit are only one part of the overall cake market

Use of sales weighted average for the 20% total sugar reduction guideline

The sales weighted average is calculated by weighting the sugar level of individual products by their volume sales. This means that a high selling product with high sugar levels drives the sales weighted average upwards, whereas a high selling product with a low sugar level drives it downwards.

PHE initially proposed, and has decided to continue, to use a sales weighted average figure for the 20% total sugar reduction guidelines. This sets out the clear goal for a sales weighted average for sugar per 100g for each category to be achieved by 2020 and provides a figure against which progress can be monitored. If these guideline figures were set per 100g without accounting for annual volume sales, the impact of a business heavily promoting a product with high sugar levels would not be taken into account.

Using a sales weighted average across relatively broad food categories provides scope for businesses to continue to provide products with a range of sugar levels as not all products would meet this figure. The sales weighted average should not be treated as a maximum as this would not be achievable for some products in each category.

Using a sales weighted average allows progress in at least two of the three mechanisms for action in the programme (reducing sugar levels in products and shifting purchasing towards lower sugar products) to be monitored. It is possible that if a large enough reduction in portion size was achieved this would also be reflected within the sales weighted average in terms of calories but not in terms of sugar; this is why we have calculated a sales weighted average figure for the number of calories per portion.

The guideline figure has been set by applying a 20% reduction to the baseline sales weighted average figure in grams of sugar per 100g for each product category. Following discussions with industry representatives from each category it is our sense that the resulting guideline figures for each category are challenging but achievable, particularly in higher sugar products that are above these levels.

All businesses are encouraged to work towards achieving a 20% reduction across the product categories that fall within their product portfolios. However, progress in businesses' biggest selling products where the sugar levels are particularly high will be key to seeing a reduction in the sales weighted average for the category and this is where businesses should therefore concentrate their efforts. This focus could be determined by using the sales weighted average figure for total sugar (20% reduction) for each relevant category to identify the products to concentrate on (that is, products that are above this level). We will focus our efforts on businesses whose products are among the top selling and have sugar levels above the sales weighted average and/or provide more calories than the maximum set for the category in a product likely to be consumed by an individual at one time.

Innovate UK is a source of funding for research projects which drive industry led innovation across many sectors. It can, therefore, help industry to reformulate products to reduce levels of sugar. A range of projects are already underway in this area, and healthy food applications continue to be encouraged under the Health and Life Science funding call.

Introducing new, 'healthier alternative' products with significantly lower sugar levels, and shifting sales towards these, will also help to achieve a change in the sales weighted average. However, it is important that action predominantly focuses on changing and reducing levels in the standard, everyday products that most people buy. Alternatives to the standard product, even after several years on the market, generally only account for a small proportion of sales and this is unlikely to change. It is our view that offering 'healthier options' when core products remain unchanged is unlikely to improve diets overall although the exception to this is soft drinks where diet/low drinks make up a substantial proportion of sales.¹⁴

Calorie or portion size guidelines for products likely to be consumed by an individual at one time

We know that some portion sizes are getting bigger¹⁵. Research shows that increasing portion sizes results in more calories being consumed and estimates that eliminating larger-sized portions from the diet completely could reduce energy intake by up to 16% among UK adults¹⁶.

PHE therefore initially proposed calorie or portion size guidelines for products that are likely to be consumed by an individual at one time. A pragmatic approach was used to set these proposed guidelines which were determined by assessing the current sales weighted average and distribution of calories (or weight in grams) provided by relevant products; by defining the size of a product likely to be consumed by an individual at one time pragmatically; and by comparing with typical amounts of relevant foods consumed by individuals within the NDNS. We also took into account recommendations on calories

to be consumed at different eating occasions¹⁷ and what had been achieved under the Public Health Responsibility Deal.

We have finally decided to retain these and to use a mix of both sales weighted average, and maximum, calorie or portion size guidelines which should be achieved by 2020. The sales weighted average calorie or portion size guideline allows businesses to continue to provide single serve products with a range of calorie levels in the same way that the sales weighted average for sugar levels does. The maximum provides a level which preferably no single product would exceed.

A portion size guideline was originally proposed for the yogurt category, this has now changed to a calorie guideline as this is more in keeping with achieving sugar and calorie reduction. An additional calorie guideline has been set for breakfast cereals that are consumed out of the home, which has been based on the 400 calorie 'allowance' for breakfast.¹⁸ The sweet spreads sub-categories are the only ones with a portion size (grams) guideline as this was felt to be the mechanism that would most influence consumption in these products.

Similar calorie guidelines have been agreed across a number of different product categories, particularly those that are likely to be eaten at similar times of day or points in a meal (eg biscuits, cake, puddings, ice cream, chocolate confectionery). The provision of calorie guidelines will also encourage manufacturers to move away from providing excessively large portions and products.

New product development (NPD) guidelines

PHE originally proposed an NPD guidelines for all categories. We are aware that some businesses have used the salt targets as benchmarks for NPD. Such figures would also provide small and medium sized businesses (SMEs) with some guidance on sugar levels in new product development.

In the feedback received it became clear that while some stakeholders (largely NGOs) felt that these would be useful, almost all businesses felt they were unhelpful to business, would restrict product innovation and were unrealistic to achieve based on the level at which they were set.

After further consideration, it is our view that NPD guidelines may be unnecessary. If a business brings new products onto the market that are above the guideline sales weighted average sugar level, and they are successful, that business is unlikely to achieve the 5% and 20% targets for sugar reduction. This would be picked up as part of the monitoring programme.

We have decided not to include NPD guidelines at this stage. As work begins on the wider reformulation programme, specifically calorie reduction, further consideration will be given to setting NPD guidelines including for those product categories covered by the sugar reduction programme.

Guidance on the use of intense and non-caloric sweeteners

We endorse the European Food Safety Authority's (EFSA) scientific opinion on low calorie/non-caloric sweeteners.¹⁹ Sweeteners that have been approved through EFSA's processes are a safe and acceptable alternative to using sugar and it is up to businesses if and how they wish to use them. It is known that some of the food and drink industry uses them as a means to lower the sugar content of their products while others do not, either due to legislative restrictions²⁰ or issues relating to consumer acceptability.

There may be advantages in businesses not adding sweeteners to their products and gradually reducing the overall sweetness of their products because this allows for people's palates to gradually adjust to less sweet foods. Further detail on the use of sweeteners, and their role in weight control, is provided in Appendix 3.

Guidance for small businesses

The 5% and 20% reduction targets for the sugar reduction programme apply to all businesses including small and medium-sized enterprises and food businesses (SMEs) across all sectors. It is particularly important for SMEs in the out of home sector to play their part where a significant proportion of sales come from such businesses. Some guidance is provided to help SMEs with this work.

- PHE's *Strategies for encouraging healthier 'out of home' food provision* toolkit, which will be published shortly, provides practical help to local councils in engaging and supporting smaller food outlets to offer healthier food and drinks and improve the eating out of home food consumed by children, young people and their families
- PHE has produced a number of guidance documents to support healthier catering practices and has worked with local authorities on improving the offer by small and medium eating out of home businesses²¹
- the Food and Drink Federation and Leatherhead Food Research have jointly produced a guide to sugar reduction for small and medium enterprises²²
- in Northern Ireland the Food Standards Agency (FSA) is working with SMEs to implement a food product improvement programme across all sectors of the food industry. The aim of the programme is to make healthier mainstream food products more available and to improve consumers' understanding so healthier choices are easier to make. The FSA is also developing a logo-based scheme that will be

awarded to SMEs in the eating out of home sector displaying calorie information at point of choice²³

- launched in October 2016, the Food Innovation Network (FIN) aims to make it easier for SMEs to find the help they need to innovate, including in relation to reformulating their current product ranges. The Knowledge Transfer Network has been appointed to co-ordinate the FIN and an industry led steering group is overseeing its development. The FIN will develop a web-based portal to help signpost information for industry including research and funding opportunities²⁴

We recognise that other actions can be taken to ensure SMEs play a role within this programme and we will continue to work on this over the coming months.

Table of sugar reduction and calorie or portion size guidelines

Table 2 sets out the reduction guidelines and calorie or portion size for each category.

The table includes the following for each category:

- a brief category description
- baseline sales weighted average in grams of sugar per 100g of product
- sales weighted average in grams of sugar per 100g when the 5% and 20% reductions respectively have been achieved
- calorie or portion size guidelines
- suggested mechanisms for action that are of most relevance to the category

Detail on the data shown in the table is included in a notes section at Appendix 2..

Table 2. Sugar reduction and calorie or portion size guidelines

Category description	Baseline sales weighted average for total sugar (g sugar per 100g)	5% reduction guideline (g sugar per 100g)	20% reduction guideline (g sugar per 100g)	Portion guideline – kcals per serve (per portion of a product likely to be consumed by an individual at one time) ^a		Mechanism of most relevance to category		
						Reformulation	Portion size	Shift portfolio of sales
Breakfast cereals: Includes all breakfast cereals, eg ready to eat cereals, granola, muesli, porridge oats. ^b	15.3g	14.6g	12.3g	400 kcals (maximum)		√		√
Yogurts: Includes all sweetened dairy yogurt, fromage frais products including non-dairy alternatives (such as soya, goat, sheep products): Excludes natural yogurt and unsweetened yogurt and fromage frais. ^c	12.8g	12.3g	11.0g	120kcal sales weighted average	175kcal maximum	√	√	√
Biscuits: Includes all types of sweet biscuits including cereal bars and toaster pastries (Pop Tarts); gluten free biscuits; two-finger Kit Kats (but all other sizes are excluded) ²⁵	32.8g	31.2g	26.2g	100kcal sales weighted average	325kcal maximum	√	√	√
Cakes: Includes all types of cakes, ambient and chilled, including cake bars and slices, American muffins, flapjacks, Swiss rolls.	34.9g	33.1g	27.9g	220kcal sales weighted average	325kcal maximum	√	√	
Morning goods: Includes morning goods such as croissants, crumpets, English muffins, pancakes, buns, teacakes, scones, waffles, Danish pastries, fruit loaves, bagels.	12.5g	11.9g	10.0g	220kcal sales weighted average	325kcal maximum	√	√	
Puddings: Includes all types of ambient (including canned), chilled and frozen puddings.	18.8g	17.9g	15.1g	220kcal sales weighted average	450kcal max 550kcal max for OOH with additions ^d	√	√	
Ice cream, lollies and sorbets: Includes all types of ice cream, dairy and non-dairy, choc ices, ice cream desserts eg Arctic roll, lollies and sorbets. Average conversion factors have been applied to ice cream products to convert volumes sales in litres to kilograms, and nutrition information provided per 100ml to per 100g. Sugar content in g per 100ml is provided in brackets.	23.2g (13.7g)	22.1g (12.8g)	18.6g (10.8g)	220kcal sales weighted average	325kcal maximum	√	√	

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Chocolate confectionery: Includes chocolate bars, filled bars, assortments, carob, diabetic, low calorie and seasonal chocolate.	54.6g	51.9g	43.7g	200kcal sales weighted average	250kcal max		√	
Sweet confectionery: Includes all sweets. Excludes sugar free sweets and chewing gum.	60.6g	57.5g	48.4g	125kcal sales weighted average	150kcal max		√	
Sweet spreads and sauces: Includes chocolate spread, peanut butter, ice cream and dessert sauces/toppings and compotes, jam type spreads that are out of scope of the legislation.				Portion size guideline (grams per portion of a product likely to be consumed by an individual at one time)				
Chocolate spread: Includes chocolate hazelnut spreads, milk chocolate spreads, confectionery branded chocolate spreads.	54.8g	52.0g	43.8g	15g sales weighted average		√		
Peanut butter: Includes peanut butter with added and no added sugar and flavoured peanut butter (including chocolate where peanuts are the main ingredient) as well as all other nut butters (eg almond, cashew).	4.9g	4.7g	3.9g	15g sales weighted average		√		
Dessert toppings/sauces: Includes dessert syrups with added sugar, coulis, compotes, cream based toppings, brandy sauce.	48.3g	45.9g	38.7g	15g sales weighted average		√		
Fruit spreads: Includes fruit-based spreads that do not fall under the EU jam definition and legislation.	43.2g	41.1g	34.6g	15g sales weighted average		√		
Notes a The factor used to convert kcals to kJ is 4.184 (multiply kcals by 4.184 to get kJ) ²⁶ b An allowance has been made for the amount of sugar coming from dried fruit in breakfast cereals of 10g per 100g. c An allowance has been made for the amount of naturally occurring sugar in yoghurt and fromage frais of 3.8g lactose per 100g. d Based on maximum for composites ie puddings plus addition of custard 124kcal per 125g portion; vanilla ice cream 82kcal per 100ml portion; single cream 55kcal per 30ml portion; double cream 133kcal per 30ml portion)								

Sugar reductions should be achieved without increasing the level of saturated fat within a product and, where possible, be accompanied by calorie reduction. Businesses are also expected to continue working towards the 2017 salt reduction targets, and those for the eating out of home sector.

Next steps

The publication of this report is the first major milestone for the sugar reduction programme. Guidelines are set for average sugar levels in products sold (weighted by volume of sales) and for the amount of calories or size of portion for products that are likely to be consumed by an individual at one time. These guidelines apply equally to all sections of the food industry and have been put in place to help industry achieve the overall target of a 20% sugar reduction by 2020, and 5% by August 2017, across the nine food categories contributing most to the intakes of children (aged up to 18 years).

Industry is encouraged to focus its reformulation efforts on its biggest selling products above the sales weighted average sugar level and calorie or portion size guidelines as these make the biggest contribution to the average amount of sugar sold and therefore consumed. Making changes to these products will be key to the success of the sugar reduction programme.

This is the first time that such an extensive, structured programme for sugar reduction has been set out in the UK and possibly worldwide. We know that other countries are taking action on sugar, in light of new intake recommendations on sugar from the WHO published in 2015²⁷, and that there is broad international interest in this programme.

WHO is also encouraging countries worldwide to reduce sugar consumption as many countries face a similar obesity crisis to England. Therefore, businesses that embrace sugar reduction thought innovation for the UK market may reap the benefits by leading the way internationally in product development.

Although the programme sets out guidelines for foods consumed by children, adults generally eat the same foods, with the only additional source of sugar for adults being alcoholic drinks. Therefore, the sugar reduction programme will benefit all family members who are also consuming too much sugar.¹ This will help reduce the prevalence of adult obesity.²⁸ It will also help to reduce health inequalities, as levels of consumption tend to be the highest in the most deprived and levels of obesity are highest in children from lower income groups.¹ Our intention is that as a result of the sugar and calorie reduction programme, the healthier choice becomes the default choice for families.

In parallel to reducing the sugar content of foods social marketing through, for example, Change4Life will support consumer understanding of the need to, and health benefits of, switching to healthier products including lower sugar ones. Consumer polling shows that people want lower sugar products and smaller portion sizes²⁹. Another important part of increasing demand for lower sugar products and reducing sugar intake is the wider uptake of healthier food procurement, catering and food sales across the public

sector and civil society including work places, by NGOs and in universities and is encouraged by PHE. The pending improvements to school food standards and voluntary guidance on food provision for the very young in for example nurseries will also be helpful.

The work to date with industry and NGOs to develop the sugar reduction programme has been critical. Insights from our meetings show that although many businesses are embracing this work, some are not. This is particularly the case for businesses in the eating out of home sector which, in general, are starting work on sugar reduction behind retailers and manufactures. This sector now provides about a fifth of calories to our diets and it is important that, like retailers and manufacturers, they improve their everyday products and move beyond offering a limited number of healthy options on menus or continue to mainly focus on their children's menus. They are also often sure that customers are informed about their food and drink choices when eating out. However, across the sector overall, nutrition information at the point where people make that choice is often unavailable, and information that is provided is often of variable quality. The sector has also, as a whole, so far been resistant or unable to provide consistent information to inform baseline levels of sugar in products for the sector for 2015.

Leading eating out of home businesses are currently developing additional guidance to further support action on sugar reduction. We look forward to seeing this as it should stimulate individual businesses, and the sector as a whole, to move forward. We will also continue engaging with the eating out of home sector to ensure that a level playing field is established and maintained through the life of the sugar reduction and wider reformulation programme.

This report brings together an in-depth analysis of sugar levels in products across food sectors. The estimated baseline levels of sugar and calories for 2015 are the first step in ensuring transparency of the programme. The separate baselines for retailers and manufacturers, and the eating out of home sector, should help ensure that all reduce sugar in their products. It should be apparent from future progress reports where successes have been achieved in net terms and where they have not.

While we have further work to do to fully scope all the data and metrics that will be included within the progress reports, these will be published regularly and will include a repeat of, and comparisons to, the baseline data for 2015. It is the intention, however, that quantitative data will be published annually.

To help inform decisions on this, and the additional data that these reports will include, we will involve stakeholders over the coming months. This will ensure that when the first detailed report showing progress towards the initial 5% reduction is published in March 2018, it will reflect progress in a way that acknowledges success. It will also be

published in such a way that all partners and supporters of the programme will find the data useful. The timing of this report accounts for lags between the completion of reformulation cycles and products appearing on the market with lower sugar levels that are reflected in the nutrition information on pack. We will expect to see reductions in both the sales weighted average levels of sugar across categories and the amount of high sugar products being sold, as well portion sizes for products likely to be consumed by an individual at one time moving downwards.

We recognise that some business made efforts to reduce sugar levels, or the number of calories in products that would likely be consumed by an individual at one time, across product ranges before 2015. We will set out a process to enable businesses to provide this information in a uniform way in the next few months. Significant reductions in sugar levels before the baseline year, that will have affected the sales weighted average across categories, by business will be reported in the March 2018 progress report.

The focus of our work on the sugar reduction programme will now shift to the additional product categories that were included in the childhood obesity plan. These are baby, weaning and toddler foods (those targeted at children aged 4/6 months to around three years) and any drinks that remain outside the scope of the soft drinks industry levy.

The wider reformulation programme will also commence later in 2017. At first this will concentrate on setting guidelines to reduce total calories in a wider range of products than those covered by the sugar reduction work (eg savoury snacks, burgers, pizzas) that contribute significantly to children's calorie intake.

It is anticipated that the SACN's report on saturated fat will be published by early 2018. This will be used to review and inform our future work on saturated fat reduction. In addition, businesses are expected to continue working towards achieving the current salt reduction targets and we will consider this work in more detail at a later stage this year.

Acknowledgements

We would like to thank the businesses and trade associations across all sectors of the food industry, and a number of public health non-governmental organisations, for their constructive engagement and significant contributions to the development of the sugar reduction programme over the last few months, particularly as this was often required over short-term timescales.

Appendices

Appendix 1 Baseline analysis of sugar levels and calories in key food categories

Appendix 2 Notes on the sugar reduction and calorie or portion size guidelines

Appendix 3 Use of intense and non-caloric sweeteners

Appendix 1: Baseline analysis of sugar levels and calories in key food categories

Estimated 2015 sugar content in soft drinks and food categories covered by PHE's sugar reduction programme

Introduction

An analysis has been undertaken to estimate baseline levels of sugar for the year 2015 in the food categories that are included in Public Health England (PHE)'s sugar reduction programme and in soft drinks¹. The programme is working to reduce the levels of total sugar in products as this is what is declared on food labels. Information on total sugar will be used to set baselines and track progress. Further details and a definition of added sugar are included in the background section in the main report.

This appendix sets out the baseline estimates in detail including the data sources, analytical methods, limitations to the data and analysis, and the analytical decisions made. Results are presented for food available in two settings:

- the retail and manufacturing sectors (retailer own label and manufacturer branded products) for in home consumption
- the eating out of home sector (eg restaurants, takeaways, pubs and cafes)

Where information is available, results have also been presented separately for retailers and manufacturers to highlight differences between these sectors.

Summary of results

Tables 1 and 2 show sales weighted average (SWA) sugar content per 100g and calories per portion, by product category: for retailers, manufacturers and the eating out of home sector. These are averages of sugar/calorie content across all products in the sector, weighted by volume of product sold in Great Britain. Simple averages are shown where there is not enough volume sales data to calculate a weighted average. Throughout this document *sugar content* refers to total sugar content per 100g of product.

Based on the analyses undertaken, SWA calories per portion are higher in the eating out of home sector than for retailers and manufacturers for all product categories where figures are available for comparison. Similarly, the eating out of home sector has the highest average sugar content for biscuits, chocolate confectionery, puddings, yogurts

¹ Soft drinks includes all soft drinks, milk-based drinks, fruit juice, and smoothies.

and soft drinks. By comparison, manufacturers have the highest average sugar content for breakfast cereals, cake and sweet confectionery products, and retailers for morning goods products.

Some of these differences reflect the different types of products that each sector sells. For example, the average sugar content of sweet confectionery eaten out of home is lower than in retailer and manufacturer products, whereas average calories per portion is highest for out of home products in this category. This may be due to popcorn, which has lower sugar content than other types of sweet confectionery, but tends to be sold proportionally more in out of home settings where portion sizes are larger.

In the case of cakes, the low SWA sugar content in the eating out of home sector is driven by sales in quick service restaurants (whose cake products have the lowest average sugar content based on the data collected). Despite sugar content being highest for manufacturers, calories per portion are lowest for this sector due to smaller product portion sizes.

Table 1: Sales weighted averages (SWA) for sugar (g/100g) by category for retailers, manufacturers and the eating out of home sector

The weighted average combines the in home manufacturer and retailer SWA with the out of home SWA, applying an 80:20 weighting respectively. Cells with a grey background contain a simple average rather than a sales weighted average due to data limitations.

Figures in italics highlight a small sample size (<50 products), and cells with a sample size of less than 10 products are blank (-).

Product category	Manufacturers	Retailers	In home (manufacturers and retailers)	Out of home	Weighted average
Biscuits	33.0	29.1	31.5	38.1	32.8
Breakfast cereals	17.4	15.5	16.7	9.8	15.3
Cakes	40.3	33.0	36.5	28.5	34.9
Chocolate confectionery	54.9	51.4	54.4	55.5	54.6
Chocolate spreads	55.5	52.9	54.8	-	54.8
Dessert toppings/sauces	52.7	27.9	48.3	-	48.3
Fruit spreads	43.2	-	43.2	-	43.2
Ice cream*	22.9 (14.1)	22.9 (13.8)	22.9 (13.9)	24.5 (12.7)	23.2 (13.7)
Morning goods	8.0	15.3	12.0	14.7	12.5
Peanut butter	5.3	4.7	4.9	-	4.9
Puddings	15.5	19.1	17.5	24.1	18.8
Sweet confectionery	61.3	60.8	61.1	58.4	60.6
Yogurts	12.2	13.1	12.4	14.3	12.8
Soft drinks (g/100ml)	5.2	4.8	5.0	7.2	5.4
SWA across all categories**	13.9	11.1	12.7	9.6	12.1

* Sugar in g per 100ml is presented in brackets alongside the g per 100g figures for ice cream

** Calculation based on biscuits, breakfast cereals, cakes, chocolate confectionery, ice cream, morning goods, puddings, sweet confectionery, yogurts and soft drinks where data are available for both retailers/manufacturers and the eating out of home sector

Table 2: Sales weighted averages (SWA) for calories (kcal)* per portion by category for retailers, manufacturers and the eating out of home sector

The weighted average combines the in home manufacturer and retailer SWA with the out of home SWA, applying an 80:20 weighting respectively. No portion size analysis was undertaken for breakfast cereals and soft drinks for retailers and manufacturers.

Cells with a grey background contain a simple average rather than a sales weighted average due to data limitations.

Figures in italics highlight a small sample size (<50 products).

Product category	Manufacturers	Retailers	In home (manufacturers and retailers)	Out of home	Weighted average
Biscuits	129	128	129	272	157
Breakfast cereals	-	-	-	246	246
Cakes	147	166	154	347	193
Chocolate confectionery	178	180	178	274	197
Ice cream	147	144	145	224	161
Morning goods	185	177	179	355	214
Puddings	149	202	174	447	229
Sweet confectionery	134	209	149	231	166
Yogurts	127	133	129	191	141
Soft drinks	-	-	-	173	173
SWA across all categories**	144	161	149	320	183

* The factor used to convert kcals to kJ is 4.184 (multiply kcals by 4.184 to get kJ)

** Calculation based on biscuits, cakes, chocolate confectionery, ice cream, morning goods, puddings, sweet confectionery and yogurts where data are available for both retailers/manufacturers and the eating out of home sector

There are no noticeable differences between the baseline 2015 statistics and distributions, and those from 2014 which are presented for comparison on pages 55-75 (retailers and manufacturers only). Changes that occurred during this period may either have been too small, or affected too few products on the market to be reflected in the category SWA figures. It will likely take some time for important changes to be evident due to the pace of industry reformulation and a time lag between this and nutrition information being updated in the data.

Figure 1. Distribution of sugar content in chocolate confectionery in 2015 with a possible future distribution after the guideline sugar reduction is achieved

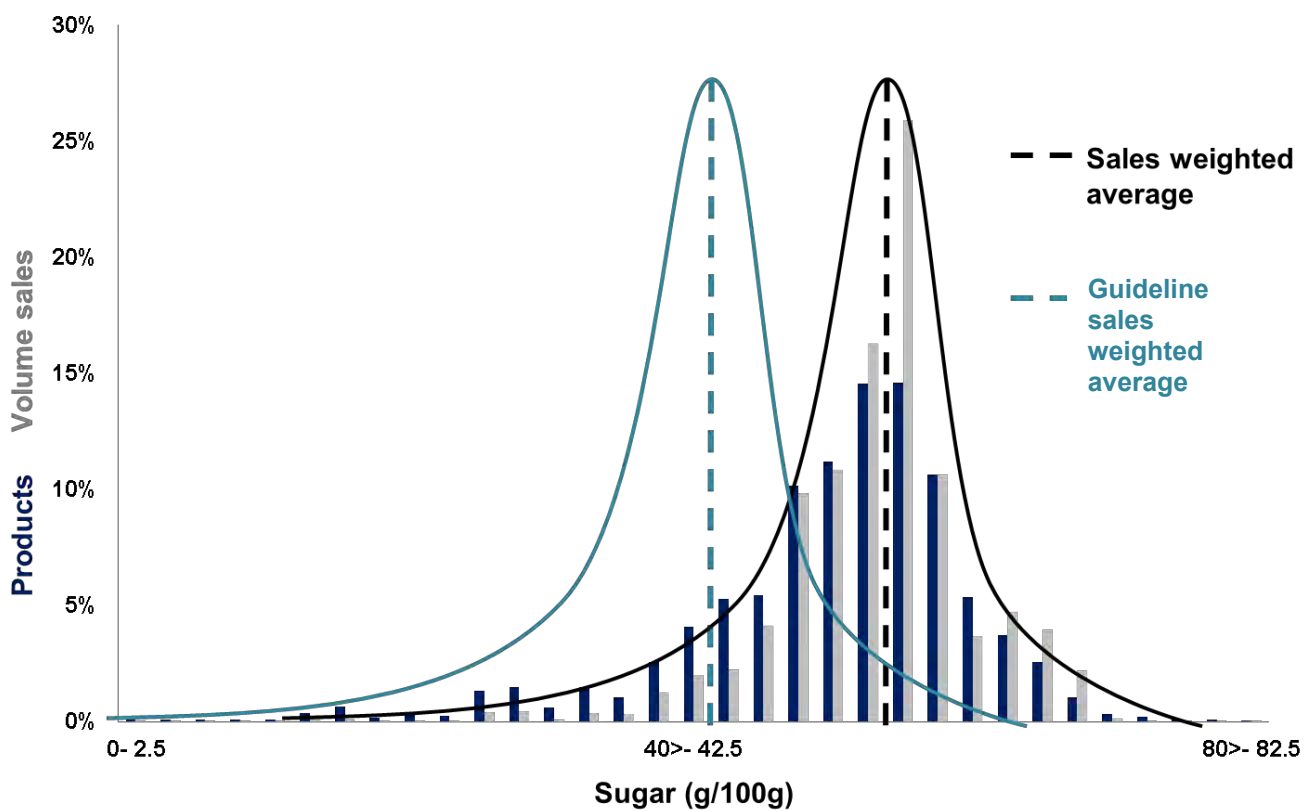


Figure 1 provides a visualisation of what the distribution of sugar content in chocolate confectionery might look like after the guideline sugar reduction is achieved. The black vertical line shows the current category SWA for sugar (g/100g), and the blue shows the guideline SWA.

As the reformulation programme progresses, it is expected to see the distribution of sugar content and calories per portion shift towards the lower end of the scale.

Methods

Data sources

PHE has used a variety of data sources to provide the 2015 baseline and to inform its decisions regarding the sugar reduction programme. These include the National Diet and Nutrition Survey (NDNS), commercial consumer panel data from Kantar Worldpanel and the NPD Group (NPD), and nutrition information obtained from individual businesses or websites.

Contribution of different food groups to sugar consumption

Data from Years 5 to 6 (2012/13-2013/14) combined of the NDNS (2) were used to examine sugar consumption. This is a continuous, cross-sectional survey that is designed to collect detailed, quantitative information on food consumption in and out of home, nutrient intake and the nutritional status of the general population aged 1.5 years and over living in private households in the UK. The survey covers a representative sample of around 1,000 people per year.

NDNS data was used to provide information on the contributions that different food groups make to total sugar intakes. These are shown in Table 3 for children aged 4 to 10 years and 11 to 18 years. The contribution made to intakes for adults aged 19 to 64 years is also included to provide context in terms of family consumption. NDNS data may provide a low or high estimate of the contribution of certain food groups covered by the programme as the NDNS food groups do not align exactly with the sugar reduction categories.

The NDNS also collects data on sugar intakes (and other nutrients) by age and sex over time. In the longer term it is expected that the impact of the sugar reduction programme will be reflected in reductions in sugar intakes reported in NDNS. Again however, it is likely to take some time due to the pace of industry reformulation and a time lag before reformulation information is available in the data.

Table 3: Percentage contribution of NDNS food and drink groups to total sugar intakes for soft drinks and food categories relevant to the sugar reduction programme

Product category	Children aged 4-10 years (%)	Children aged 11-18 years (%)	Adults aged 19-64 years (%)
Biscuits	5	5	3
Breakfast cereals	5	5	4
Cakes and morning goods	4	4	4
Chocolate confectionery	5	7	5
Ice cream	4	3	2
Puddings	4	2	2
Sweet confectionery	4	4	1
Sweet spreads	1	1	0.2
Yogurts	3	2	3
Fruit juice and smoothies	7	8	5
Soft drinks	9	20	11
TOTAL	52	60	39

Source: National Diet and Nutrition Survey rolling programme years 5 and 6 (2012/13-13/14)
Totals may not match due to rounding

Commercial data

Market data have been used for the full year of 2015 to inform and set the baselines (meaning seasonal foods are captured). The data source is the same for retailers and manufacturers, but different for the eating out of home sector. Analysis of retailers covers retailer 'own label' products only.

Retailers and manufacturers

The baseline 2015 estimates of sugar content by food group for retailers and manufacturers have used data from Kantar Worldpanel's take home consumer panel. Kantar Worldpanel is a global market research business which runs a continuously reporting panel of 30,000 households across Great Britain, who record details of all take home food and drink purchases, including volumes bought.

Kantar'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 2015 dataset used for the sugar reduction programme covers the 52 weeks ending 31 January 2016, and includes total volume sales in kilograms/litres/servings and

nutrition data for individual food products per 100g/100ml/serving as well as details of pack size, number included in multipack etc.

Kantar aims to collect all nutrition data from food labels on individual products via the use of fieldworkers who visit key retail stores and capture the information provided on packaging on a rolling six monthly basis. Some nutrition information is also collected from third party Brandbank². Where Kantar is able to do this, 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 (known as cloned) or an average value for the category or product type is calculated and used instead, designated as *imputed* data. For the current set of analyses only *real* data have been used. Where there was a low amount of real data available, PHE used business-supplied nutrition data to replace the imputed data. This was used for cakes, morning goods and in-store bakery items, and was provided by Allied bakeries, Délifrance, Frank Roberts and Sons, Marks and Spencer, Pladis Foods, Premier Foods and Warburtons. Munoz also provided information on unit sales and sugar content of Tesco ice cream for comparison, though this has not contributed to the figures in the analysis.

Eating out of home sector

Unlike the retail and manufacturing sectors, there is no one data source that can be used for the eating out of home sector. There is currently no legal obligation to provide nutrition information for foods consumed out of home although some businesses do provide this on their websites, leaflets or menus. In addition, there is no central data source that collects volume sales in kilograms/litres and nutrition data for individual food products. To supplement this PHE has used different sources of data as detailed below.

Sales data for foods eaten out of home

PHE has used data on food purchases collected by NPD for their Consumer Reports on Eating Share Trends (CREST) survey. Each month 18,000 online surveys are sent on a rotational basis to a panel of approximately 90,000 people in Great Britain, who record all purchased meals, snacks and beverages eaten out of home (both on and off premise) over the previous day. To be recorded as a CREST eating occasion the item has to be purchased ready for immediate consumption (ie not prepared at home). Panellists have to be 16 or over but children under this age are accounted for if they are present in the party (the panellist will record their consumption). The sample is representative of the population of Great Britain in terms of age, gender, region, household size and social class.

Sales data are measured by number of portions sold and incidence (% of occasions involving that product). Aggregated data are presented by product category and by food

² Brandbank collects and supplies pictures of various product data, including nutritional information (<https://www.brandbank.com/>)

outlet type. This means that data are provided for different product types rather than individual products eg muffins rather than individual types of muffins (chocolate, blueberry etc); and on different types of outlets eg full service restaurants, quick service restaurants, cafes and coffee shops, pubs, rather than on individual businesses. No nutrition information (such as sugar or calorie content) has been provided as this is not collected by NPD. NPD's eating out of home food outlet type categories are listed in Table 4. It should be noted that NPD's product categories do not align exactly with PHE's sugar reduction categories; details of how the two have been matched are outlined in Table 5. No sales data have been obtained from NPD for the sweet spreads sub-categories.

Table 4: Definitions of the eating out of home food outlet types as categorised in the NPD CREST database

Out of home outlet type	Types of business included
1. Quick service restaurants	Fast food outlets, takeaways, self service restaurants, food kiosks, bakeries/butchers/delis, sandwich shops, delivery services
2. Retail on the go	Supermarkets, newsagents, department stores
3. Quick service coffee/café/bistro	Coffee shops (with or without table service)
4. Pubs	Pubs
5. Full service restaurants	Sit-down restaurants with table service (traditional, chicken, pizza/Italian, ethnic)
6. Hotels	Hotels
7. Travel and leisure	Cinemas, in-store restaurants, on board catering, motorway service stations, ice cream shops
8. Workplace catering	Office canteens
9. Vending	Vending machines

Table 5: Description of how NPD CREST food/drink product categories have been matched to those covered by PHE's programme

PHE programme category	NPD product categories
Biscuits	Cookies; cereal/energy bars
Breakfast cereals	Cold cereals; hot cereals/porridge/oat
Cakes	Brownies; cakes; doughnuts; muffins
Chocolate confectionery	Chocolate bars
Ice cream	Ice cream
Morning goods	Pastries/Danishes/croissants; tea biscuits/scones; waffles/crepes/pancakes
Puddings	Cheesecake; pies/crumbles; pudding; tarts
Sweet confectionery	Popcorn; sweets
Yogurts	Yogurt
Soft drinks	Diet/low calorie cola; regular cola; juice; juice drinks; smoothies; energy/sport drinks; milkshakes; yogurt drinks; slushies; flavoured still bottled water

Source: NPD provided this separately as supplementary information

Nutrition information

PHE has collected online nutrition data for 1841 products from 43 businesses. The nutrition information was collected in the format that was provided: per 100g and/or per portion, between June and November 2016 for the categories currently included in the programme; and between February and March 2017 for soft drinks. Portion weights were also recorded where given. Due to the timing of the data collection, reformulation changes made between 2015 and 2016/17 may not be evident when data used for progress reporting are compared against the baseline.

Due to the limitations of the data held on the eating out of home sector, work has been undertaken to supplement this. Following a series of discussions and requests made, several eating out of home businesses have supplied nutrition information and volume sales data in kilograms/litres to PHE directly. One representative trade body, British Retail Consortium (BRC) has additionally supplied anonymised nutrition information for four eating out of home businesses and six retailers. Table 6 shows which businesses have supplied eating out of home data, and whether these could be used in the baseline analyses. Where businesses have provided sugar and calorie information on their products (and this is more complete than the nutrition data collected online), the business-provided data have been used instead of the online data.

Apart from BRC's data which were aggregated and therefore may duplicate some existing data, most business supplied data contributed to the simple averages, but not necessarily to the sales weighted averages (SWAs).

This is because the sales weighted averages in the eating out of home sector relied on NPD's CREST data, which provided unit sales aggregated by type of food outlet only; for some of the data received it was not clear in what type of outlet the food was sold. Business data are assumed to be representative of 2015 unless PHE have been told otherwise. Information provided after the cut-off date of 6 March 2017 has not been used.

The total volume sales data and top-sellers information that PHE have already been provided are likely to contribute to analyses for later progress reporting but have not been used for the baseline analyses presented in this appendix. This is because there is not yet enough business supplied data to replace NPD data. PHE is continuing to work with the eating out of home sector to identify what additional data it may be able to share.

Table 6: Type of information provided by each business for the eating out of home sector; whether it was used for the 2015 baseline analyses

Business	Information type		Data used for simple averages?	Data used for SWAs?	Notes on use / non-use
	Nutritional	Sales volumes*			
Compass Group UK	✓	✗	✓	✓	Data used for SWAs where food outlet type known
Costa	✓	✗	✓	✓	All data used (supplemented with online data)
Froneri	✓	✓	✓	✗	Sugar content and unit sales of top ten selling products provided. Food outlet type unknown for consideration in SWA
Greggs (provided by the British Retail Consortium (BRC))	✓	✗	✗	✗	Unable to disaggregate by business; online data used to avoid duplication of data
KFC (provided by BRC)	✓	✗	✗	✗	Unable to disaggregate by business; online data used to avoid duplication of data
Mars	✗	✓	✗	✗	Received sales volumes and portion size data; online nutrition data used
Marks and Spencer (café)	✓	✗	✓	✓	All café data used; in store bakery data used for in home analysis
McDonalds (provided by BRC)	✓	✗	✗	✗	Unable to disaggregate by business; online data used to avoid duplication of data
Mitchells and Butlers (Toby Carvery/ Harvester)	✓	✓	✓	✓	All data used (supplemented with online data)

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Nestle	✓	✓	✓	✗	Food outlet type unknown for consideration in SWA
Pizza Express	✓	✗	✓	✓	All data used (supplemented with online data)
Pret a Manger	✓	✗	✗	✗	Aggregated data provided on top-selling product categories; online data used
Starbucks (provided by BRC)	✓	✗	✗	✗	Unable to disaggregate by business; online data used to avoid duplication of data
Wetherspoon, JD	✓	✓	✓	✓	All data used (supplemented with online data)
Whitbread (Beefeater / Brewers Fayre)	✓	✗	✓	✓	No portion size data received; supplemented with online data

* Sales data is shown where provided but has not been used for the 2015 baseline analyses in this appendix. It has not been possible to use data received after the cut-off date of 6 March 2017.

Data analysis

The analysis undertaken has been divided into separate sections for each product category captured within the sugar reduction programme. An additional section has been produced on soft drinks (all soft drinks, milk-based drinks, fruit juice, and smoothies) as, while the majority of these products are subject to the soft drinks industry levy which is the responsibility of HM Treasury (HMT) and not part of the sugar reduction programme, PHE will be working with HMT to monitor the sector in the same way as the other categories that are included. In addition, any drinks that remain out of scope of the levy will become part of the sugar reduction programme. Further reports on the drinks that are within and outside the scope of the levy may be produced in the future.

There are two sections for each product category, one covering retailers and manufacturers and another for the eating out of home sector. It was not possible to combine the data for the two sectors because of differences between the two datasets and limitations of the data available, particularly for the eating out of home sector. For the same reason it has not been possible to produce exactly the same metrics and analyses for each sector. A summary table of the data and metrics it has been possible to calculate for each sector is included in Table 35.

Baseline statistics

Retailer and manufacturer data analysis

Sales weighted average (SWA) figures and associated measures have been calculated at food category level for the baseline year 2015, with 2014³ also provided for comparison.

Information for sugar contributors is included as a reduction in the sugar content of a top-selling product will have a greater impact on the category SWA than the same reduction of sugar in a less popular product due to the weighting on sales. The full list of measures and definitions is provided in Table 7.

³ 2014 analysis is based on Kantar take home consumer panel data for the 52 weeks ending 25 May 2014

Table 7: Definitions of the sugar sales weighted average and range statistics presented for retailers and manufacturers

Metric	Description
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content(g per 100g)	Average total sugar in g per 100g (or per 100ml for drinks) of products across the category, where each product's sugar content per 100g (or 100ml) has been weighted by the volume of product sold in 2015.
% of top 20 sugar contributors at/below current baseline SWA total sugar content	Manufacturers and retailers have been ranked by total volume sugar sales in 2015, and the top 20 referred to as 'sugar contributors'. After calculating a SWA sugar content (g/100g or g/100ml) for each sugar contributor, the proportion that have a SWA at or below the category SWA (presented in the row above) is stated here.
Range of total sugar content across products in category (min-max, g per 100g/ml)	The range of sugar (g/100g or g/100ml) across all products in the category. Zero sugar content has been considered implausible, and these products excluded from the analysis, for all categories apart from soft drinks.
Range of total sugar content in top 20 products by 2015 volume sugar sales (min-max, g per 100g/ml)	The range of sugar (g/100g or g/100ml) across the top 20 products in the category, where products have been ranked by 2015 volume sugar sales
SWA calories per portion (for single serve products)	Average calories per portion of products identified as single serve (likely to be consumed by an individual at one time), weighted by the number of portions of product sold in 2015.

Portion size analysis

Single serve products, which are likely to be consumed by an individual at one time, have been identified for each category to study the distribution of calories per portion. This, along with data on the weights of food eaten by individuals in the Years 5 to 6 NDNS survey, have informed suggested guideline maximum calories per portion for products. Breakfast cereals and the sweet spreads sub-categories have not been included.

The sweet spreads sub-categories have a guideline maximum portion size (grams) as this was felt to be the mechanism that would most influence consumption of these products. Breakfast cereals that are consumed out of the home have been set a guideline maximum of 400 calories. This is considered to be a suitable “allowance” for breakfast (including any drinks and accompaniments) when taken in the context of a 2,000kcal daily intake for women and 2,500kcal for men. This would allow for 600 kcals each from lunch and dinner (making a total of 1200 kcals from the two main meals of the day), with the remaining calories allowing for snacks and drinks.

A full description of the products used in the portion size analysis is provided in Table 8. Both items sold individually and in multi-packs in the Kantar dataset have been taken into account. Some pragmatic judgements were also made to exclude certain products based on the assumption that they were unlikely to be consumed in one sitting (eg advent calendars, assortment/selection boxes of biscuits).

Table 8: Descriptions of products considered to be single serve items within each food category

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 (≤80g) of biscuits/chocolate mallows/rice cakes • large biscuits (eg giant custard cream) and individual cookies up to 80g • packets of three biscuits (eg short bread, bourbons), toaster pastries <p>Excludes: all products below 10g or above 80g (eg roll packs, packet biscuits, large packs of rice cakes); selection/assortment boxes; boxes of cookies</p>
Cakes	<p>Includes:</p> <ul style="list-style-type: none"> • single portions/slices of cake products, and single serve items in multipacks <p>Excludes: all products below 10g (eg 'bitesize' products) or above 150g (eg 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) (≤80g) • mini and treat size bags (≤80g) • duo, trio and bar and half chocolate • chocolate lollipops • single festive items (≤80g) eg chocolate bunnies, Santas or eggs <p>Excludes: all products below 10g or above 80g (eg moulded chocolate bars/slabs, sharing bags); boxes/tins of chocolate; seasonal products sold as multiple miniature items (eg chocolate coins, Christmas tree decorations, advent calendars)</p>
Ice cream	<p>Includes:</p> <ul style="list-style-type: none"> • miniature ice creams • ice cream in a cone or on a stick • lollies, choc ices • cups/tubs (≤120g) <p>Excludes: all products exceeding 120g</p>
Morning goods	<p>Includes:</p> <ul style="list-style-type: none"> • morning goods sold as single items or single serve items in multipacks <p>Excludes: all products below 10g (eg 'bitesize' products) or above 150g; all pancakes and small waffles (people generally consume more than one); finger buns</p>
Puddings	<p>Includes:</p> <ul style="list-style-type: none"> • individually wrapped puddings, puddings in multipacks (eg 2 pack sticky toffee puddings) <p>Excludes: all products below 35g (eg '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 (≤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	<p>Includes:</p> <ul style="list-style-type: none"> • yogurts weighing 100-200g <p>Excludes: all products below 100g (typically only marketed to children) or above 200g</p>

Product category-specific considerations and exceptions

Breakfast cereals

While an allowance has been considered for plain dried fruit in cereals, this has not been applied in the calculations for this category. Additional information is available in Appendix 2.

Cakes and morning goods

Due to a lack of portion weight information for cakes and morning goods in the 2015 Kantar dataset, 2014 Kantar sales and nutrition data (where an additional weighing exercise was undertaken) have been used in the baseline analyses instead. To overcome limited real nutrition information for these categories, PHE has supplemented the Kantar data with nutrition information supplied by manufacturers for 2015. Where it has been possible to identify and match products this has replaced Kantar's nutrition information, allowing SWAs to be recalculated for cakes and morning goods based on a larger proportion of real data.

Ice creams

Average conversion factors have been applied to ice cream products to convert volume sales in litres to kilograms, and nutrition information provided per 100ml to per 100g. Products were grouped into the eight sub-categories provided below, each with its own conversion factor. These were derived from information provided by Froneri on their top-selling products. These conversion factors are to divide by when converting litres into kilograms.

Tubs/Soft Scoop (2.2), Premium (1.5), Lollies (1.0), Sorbet (1.4), Frozen Yogurt (1.5), Gelato (1.3), Cornish (1.9), and Other (1.5).

Puddings

Quick-set jellies, powdered desserts and custards have been excluded from the analysis as nutritional information is predominantly provided 'as sold', which skews sugar levels in the category towards the higher end.

Soft drinks

Litres have been used as the unit of sale for soft drinks, with SWAs for sugar calculated in grams per 100ml. Where converting between kilograms and litres has been necessary, a 1g:1ml conversion factor has been applied.

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 nutritional 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 inspection, looking at the nutrition information and dilution instructions for a sample of products online.

Milkshake mixes have been excluded from the analysis as some nutritional information is provided 'as sold' and some 'as consumed' with it not always being possible to distinguish between the two.

Yogurts

An allowance has been made for the lactose and galactose content in yogurts. The SWA total sugar guideline is based on a 20% reduction of the added sugar content, rather than a 20% reduction of the total sugar content. To establish what this is, PHE commissioned the Provision Trade Federation (PTF) to co-ordinate scientific research to examine the intrinsic milk sugar content in a representative sample of yogurt and fromage frais on sale in the UK in 2017. Once the sample had been analysed, a simple weighted average was calculated of the fruit/flavoured versions only, which excluded the natural versions.

The recommended figure to use for lactose and galactose content was 3.8%. The baseline SWA for sugar for 2015, excluding plain yogurt/fromage frais, is 12.8g/100g. This includes all the sugar in the yogurt, both added NMES and intrinsic milk sugar. Box 1 outlines details of the calculations carried out to obtain the overall SWA for the yogurts category, taking milk sugars into account.

Box 1: Calculations used to obtain the sales weighted average (SWA) guideline for total sugar content (g/100g) in yogurts

- 1) For the guideline reduction to be based on added sugar, 3.8g lactose and galactose is removed from the 12.8g of total sugar per 100g, which gives 9.0g/100g yogurt.

$12.8 - 3.8 = 9.0\text{g}/100\text{g}$ This is the baseline from which to reduce sugar by 20%.

- 2) To obtain the guideline for added sugar, this figure is reduced by 20% to give 7.2g/100g:

$9.0 \times 80\% = 7.2\text{g}/100\text{g}$ This is the guideline SWA for added sugar.

- 3) To obtain a figure with the added sugar reduced and the milk sugars present and not reduced, the 3.8g/100g lactose and galactose is added back in to give 11.0g/100g:

Eating out of home data analysis

Median portion sizes, median sugar content and median calories per portion have been calculated for each food outlet type, where it has been possible to collect some nutrition information on individual products from outlets in that category. These median measures have been applied to NPD sales data to calculate category SWAs for sugar per 100g and calories per portion. Full definitions are provided in Table 9.

Medians have been taken instead of simple averages as they should be less sensitive to skewed distributions of values and extreme values, and less volatile to change when data are replaced or added to over time, therefore providing a more meaningful picture of a typical value for each food category.

A minimum sample size of 10 is applied (below which the food outlet type is not included in the SWA calculation), and a sample of less than 50 is highlighted as small. Approximate 95% confidence intervals for the medians have been included for reference.

Table 9: Definitions of the sugar sales weighted average and range statistics presented for the eating out of home sector

Metric	Description
Baseline sales weighted average (SWA) total sugar content (g per 100g/100ml)	Average total sugar in g per 100g (or per 100ml for drinks) of products across the category, estimated by weighting the median sugar (g/100g or g/100ml) value for products in each food outlet type by volume sales in that food outlet type. Volume sales are estimated by multiplying the number of servings sold by the median portion weight for the food outlet type.
Range of total sugar content across products in category (min-max, g per 100g/100ml)	The range of total sugar in g per 100g (or per 100ml) across products in the category, where nutrition information has been collected from websites or supplied by businesses.
Range of total sugar content in products of top chains (min-max, g per 100g/100ml)	The range of sugar in g per 100g (or per 100ml) across products from the top 3 coffee shop, top 5 pub and top 5 full service restaurant chains, based on number of servings sold in the 2015 NPD CREST data.
SWA calories per portion	Average calories per portion of products across the category, calculated by weighting the median calories per portion for each food outlet type by the number of servings sold through that food outlet type.

Portion size analysis

All products sold out of home have been considered to be single portions, unless it is clear from the description that the product is designed to be shared (eg sharing ice-cream sundaes). Products sold loose, such as pick n’ mix, are not included in the portion size analysis.

Metrics produced

An overall SWA for sugar in each product category has been calculated by combining the in home retailer/manufacturer SWA with the eating out of home SWA, applying an 80:20 weighting respectively. This weighting has been taken from the Years 5 and 6 NDNS analysis showing that, on average, 20% of meals over the survey study period were consumed out of home. The exact proportion varies depending on how the definition of eating out is applied. This weighting will be reviewed for future progress monitoring should new evidence suggest that the frequency of eating out has changed.

The baseline analyses presented in this appendix in Tables 1 to 2 and 10 to 34 includes the following data and information for 2015:

- one figure for overall SWA sugar in g per 100g for each product category, which combines the in home retailer/manufacturer SWA (80% weighting) with the eating out of home SWA (weighting 20%)
- SWAs at product category level for:
 - sugar content in g per 100g (all sectors)
 - calories per portion for single serve products (all sectors)
- simple averages and medians at product category level for:
 - sugar content in g per 100g (all sectors)
 - calories per portion, and portion size, for single serve products (all sectors)
- percentage of top 20 sugar contributors, ranked by 2015 volume sugar sales, whose baseline SWA for sugar is at or below the category SWA (retail/manufacturers only)
- range of sugar content across all products in category, in g per 100g (all sectors)
- range of sugar content in top 20 products, ranked by 2015 volume sugar sales, in g per 100g (retail/manufacturers only)
- market share, by 2015 volume sales, of manufacturers versus retailers

Additional data is provided for the eating out of home sector for each product category on:

- the number of businesses and products for each food outlet type for which there is nutrition information available
- median sugar content in g per 100g, median calories per portion and median portion size for each food outlet type
- the range of sugar content in products sold by the top 3 coffee shop/5 pub/5 full service restaurant chains (according to NPD volume sales data), in g per 100g

Distribution charts have also been produced to show the range of sugar content for all products in the category, and calories per portion for single serve products.

A number of these metrics have also been produced for 2014, though for retailers and manufacturers only. This is to highlight any changes in sugar content, or portion size, made between the two years and datasets.

Data limitations

Retailer and manufacturer data

Kantar's fieldworkers go into stores to collect nutrition information on a rolling six month basis but this does not update all products in the dataset each time. 46% of products used in these baseline analyses have real data available from 2015/16; the rest are from pre-2015. Less than 10% of products have nutrition data dating back to pre-2014. This means that some reformulation changes may be picked up late in future progress reporting.

Kantar collects standard nutrient data for products as sold rather than as they are consumed. There are also a number of products where the information available on packaging is for the product as made up/as consumed, which have been included in the analysis. This is the case for some dilutables and pudding/cake mixes.

Products such as jellies, powdered dessert mixes and custards, which are normally diluted before use, have been excluded from the analysis as the nutrition information provided 'as sold' would inflate sugar levels across the category. Where nutrition information for dilutable juice drinks and pudding/cake mixes is available 'as made up/as consumed' these products have been included in the baseline analyses.

Some errors are known to be present in the nutritional information for certain products – eg zero/implausible sugar content. Yogurts is the only category where a minimum sugar content of 3.8g (rounded to 4g) per 100g was agreed due to the naturally occurring lactose; all products with a sugar content lower than this had it replaced to equal 4g/100g in the dataset. For the remaining food categories, all products with zero sugar have been excluded from the analysis as they are considered errors. No further adjustments have been made for these categories due to the difficulty of setting a minimally acceptable sugar content for the products involved. No changes have been made to the Kantar soft drinks data.

Eating out of home data

The eating out of home data does not include sales data for individual businesses or products, meaning SWAs for sugar and calories cannot be calculated in the same way using the same level of detail as for retailers and manufacturers. Instead, SWAs have been calculated using the assumption that median values represent typical portion sizes, sugar and calorie content for each eating out of home food outlet type. Small

sample sizes of out of home products are a limitation for certain product and food outlet types.

Reformulation changes may be harder to detect and monitor in the eating out of home sector given the current lack of granular sales data and the use of median sugar, calorie and portion weight values. There is also the risk that businesses that have provided PHE with nutrition data to inform the 2015 baseline analyses may not necessarily supply the same data each year to inform annual progress reporting. This could skew the median values used for SWA estimates and impact on the comparability of results to the baseline year. However, many businesses have a commitment to transparency and making nutrition information available to customers through websites etc., which will allow average changes in sugar content over time to be detected.

Discussions are continuing with the sector on how to improve the quality of data used for progress monitoring. Should more data become available in future it is possible that the baseline analyses will be revisited and reviewed.

A summary of the limitations presented here is provided in Table 35.

Quality assurance

The data sources and methodology for the 2015 baseline analyses were presented to external stakeholders (including retailers, manufacturers, eating out of home businesses, trade bodies and non-governmental organisations) at three meetings in January and February 2017. Prior to this, nine category specific meetings were held with the same stakeholders to discuss PHE's proposals for guideline sugar content and guideline maximum calories per portion, as well as the products included within each category. Feedback was requested from attendees on both occasions and the responses received were used to check that PHE's proposals, the category definitions, analytical methods and data sources used were appropriate.

The commercial datasets used from Kantar Worldpanel and NPD have quality control measures built into their production process. In addition, PHE has carried out its own quality control checks of all data used, with limitations outlined in the preceding *Data Limitations* section.

The baseline analyses and methodology have been subject to review both internally and externally to PHE (eg by contacts at the Department of Health)

2015 baseline analyses

The following pages include the baseline analyses for each category presented in two parts: one covering the retail and manufacturing sectors and the other covering the eating out of home sector.

1. Public Health England. National Diet and Nutrition Survey Results from Years 1, 2, 3 and 4 (combined) of the Rolling Programme (2008/09-2011/12). London 2014.
2. Public Health England. National Diet and Nutrition Survey Results from Years 5 and 6 (combined) of the Rolling Programme (2012/2013 –2013/2014. In: England PH, editor. London: Public Health England; 2016.

Retailers and manufacturers

Table 10: Simple average and median statistics for soft drinks and food categories covered by the PHE’s sugar reduction programme

Product category	Simple average			Median		
	Sugar(g/100g)	Portion weight (g)	Calories per portion (kcal)	Sugar(g/100g)	Portion weight (g)	Calories per portion (kcal)
Biscuits	31.0	32	144	30.9	30	130
Breakfast cereals	18.2	-	-	19.3	-	-
Cakes	36.0	47	188	36.8	35	149
Chocolate confectionery	51.4	44	230	53.3	41	216
Chocolate spreads	52.6	-	-	55.3	-	-
Dessert toppings/sauces	40.5	-	-	40.8	-	-
Fruit spreads	42.0	-	-	52.0	-	-
Ice cream	22.9	62	135	22.5	67	128
Morning goods	15.3	64	195	16.4	65	194
Peanut butter	6.0	-	-	5.2	-	-
Puddings	22.5	109	236	21.0	105	219
Sweet confectionery	60.0	55	207	59.9	50	181
Yogurts	12.9	138	152	13.0	140	143
Soft drinks	6.8	-	-	8.1	-	-

Biscuits in the retail and manufacturing sectors

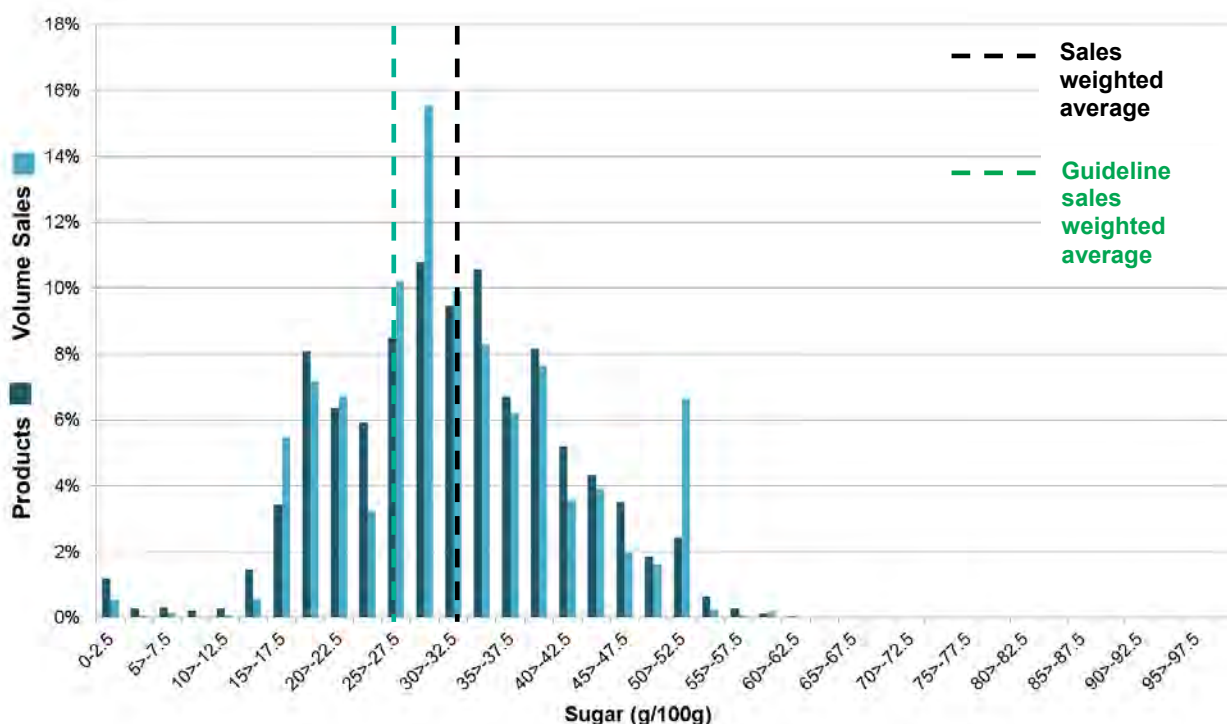
Table 11.1: Sales weighted averages and ranges of sugar (g/100g) in biscuits in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	31.4g	31.5g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	65%	65%
Range of total sugar content across products in category (min-max, g per 100g)	0.5g – 62.4g	0.5g – 61.0g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	16.6g – 52.5g	16.6g – 52.5g
SWA calories per portion (for single serve products)	124 kcal	129 kcal

Table 11.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

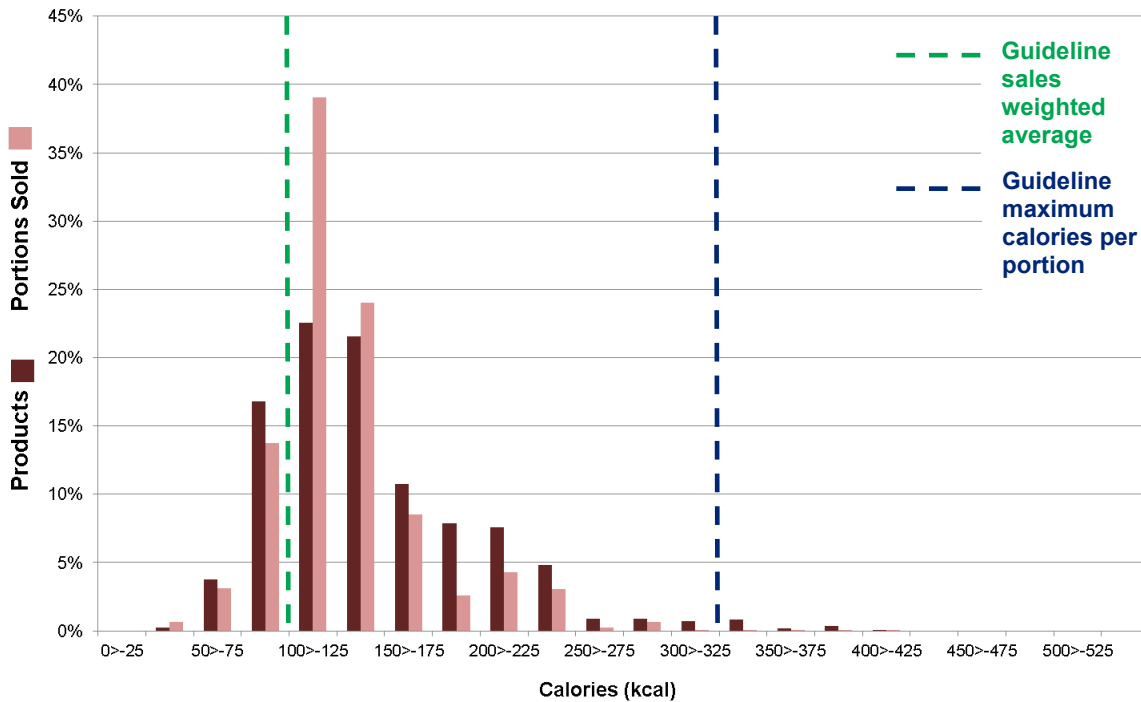
	Manufacturers	Retailers
Market share (% volume sales)	60.5%	39.5%
SWA total sugar content (g per 100g)	33.0g	29.1g
SWA calories per portion (for single serve products)	129 kcal	128 kcal

Graph 1.1: Biscuits - distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (2686 products)

Graph 1.2: Biscuits - distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (1117 products)

Breakfast cereals in the retail and manufacturing sectors

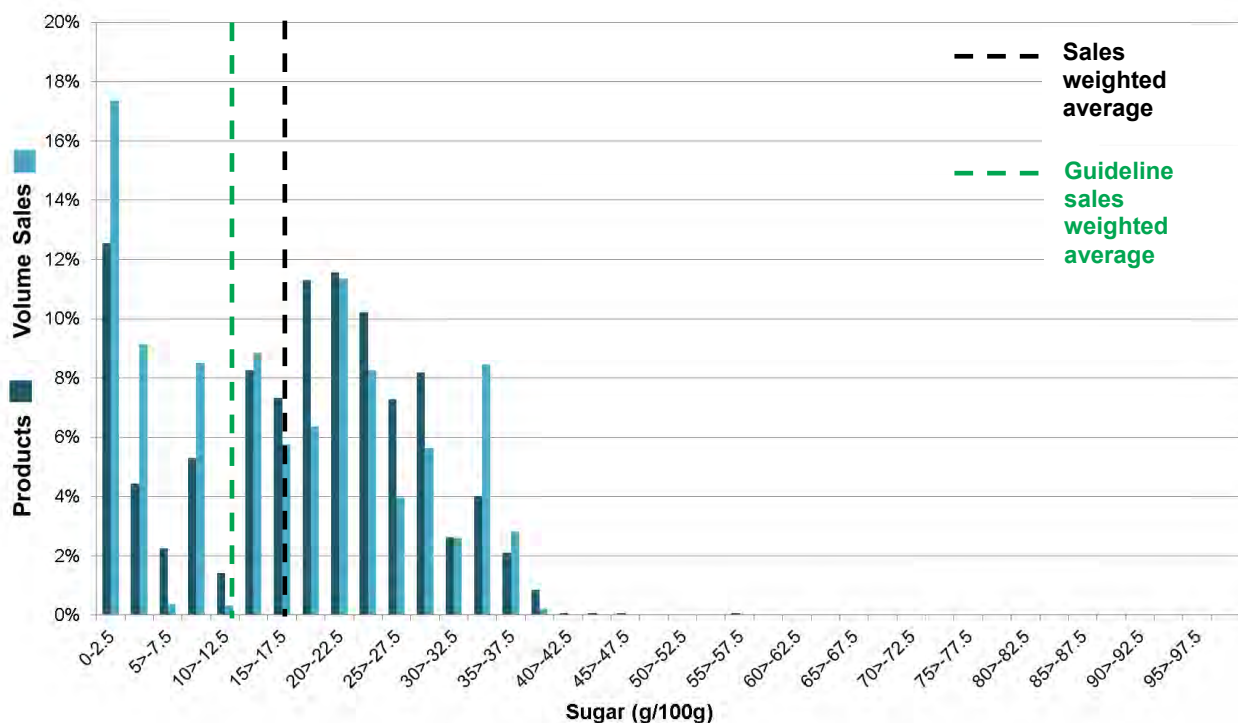
Table 12.1: Sales weighted averages and ranges of sugar (g/100g) in breakfast cereals in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	17.0g	16.7g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	60%	65%
Range of total sugar content across products in category (min-max, g per 100g)	0.3g -47.1g	0.1g – 56.7g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	8.0g – 37.0g	8.0g – 37.0g

Table 12.2: 2015 market share and sales weighted averages for sugar (g/100g) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	63.4%	36.6%
SWA total sugar content (g per 100g)	17.4g	15.5g

Graph 2.1: Breakfast cereals – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (1417 products)

Cakes in the retail and manufacturing sectors

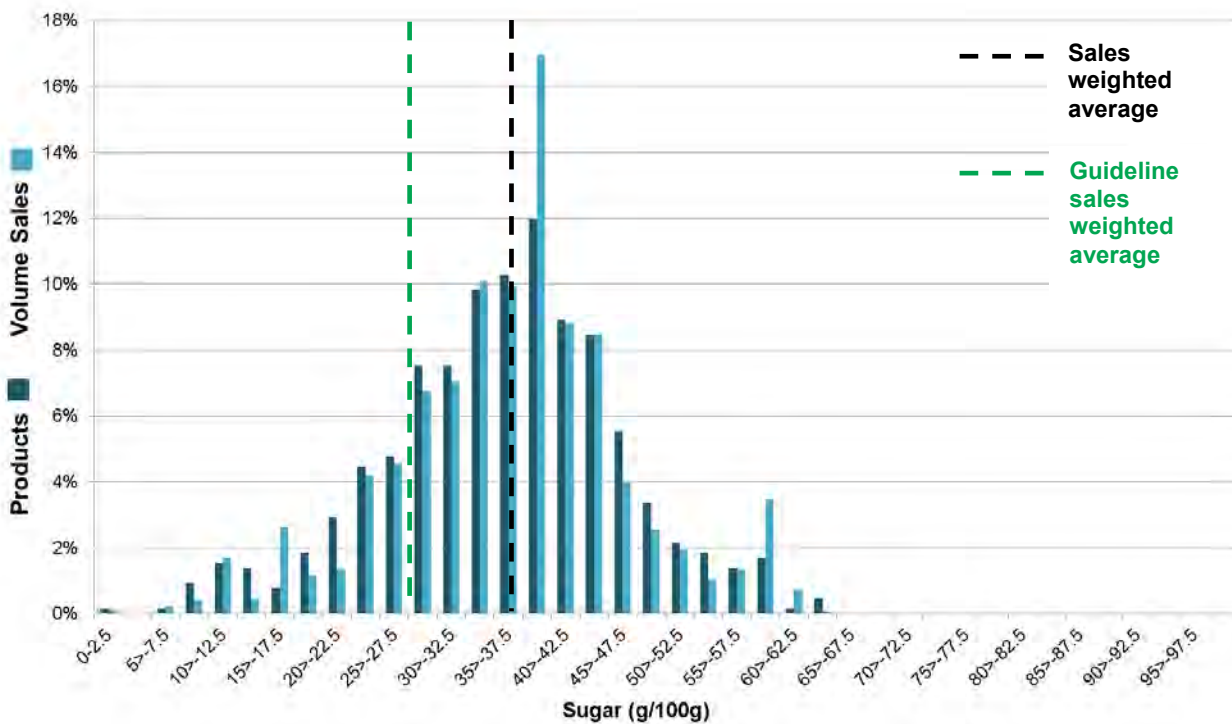
Table 13.1: Sales weighted averages and ranges of sugar (g/100g) in cakes in 2014 (2015 data are not available for this category)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	36.5g	N/A
% of top 20 sugar contributors at/below current baseline SWA total sugar content	65%	N/A
Range of total sugar content across products in category (min-max, g per 100g)	1.0g – 64.1g	N/A
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	26.2g – 62.0g	N/A
SWA calories per portion (for single serve products)	154 kcal	N/A

Table 13.2: 2014 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

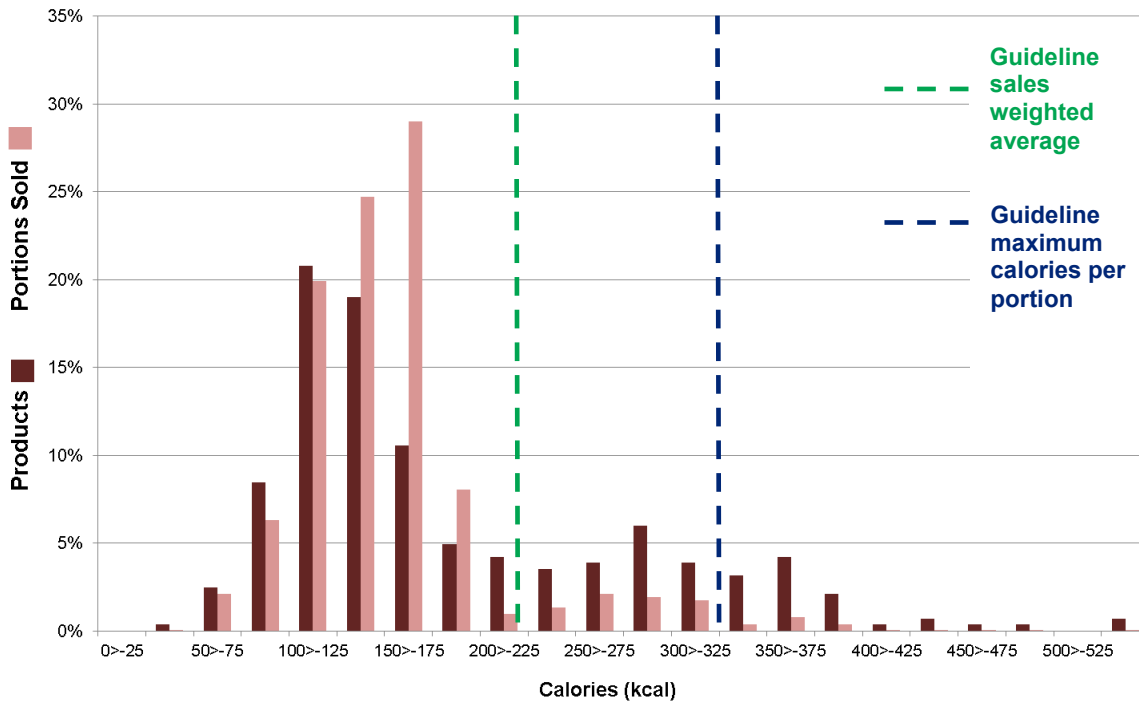
	Manufacturers	Retailers
Market share (% volume sales)	47.9%	52.1%
SWA total sugar content (g per 100g)	40.3g	33.0g
SWA calories per portion (for single serve products)	147 kcal	166 kcal

Graph 3.1: Cakes – distribution of sugar content (g/100g) in 2014



Source: Kantar GB 2014 take home consumer panel data, and nutrition data supplied by businesses (651 products)

Graph 3.2: Cakes – distribution of calories per portion for single serve products in 2014



Source: Kantar GB 2014 take home consumer panel data (284 products)

Chocolate confectionery in the retail and manufacturing sectors

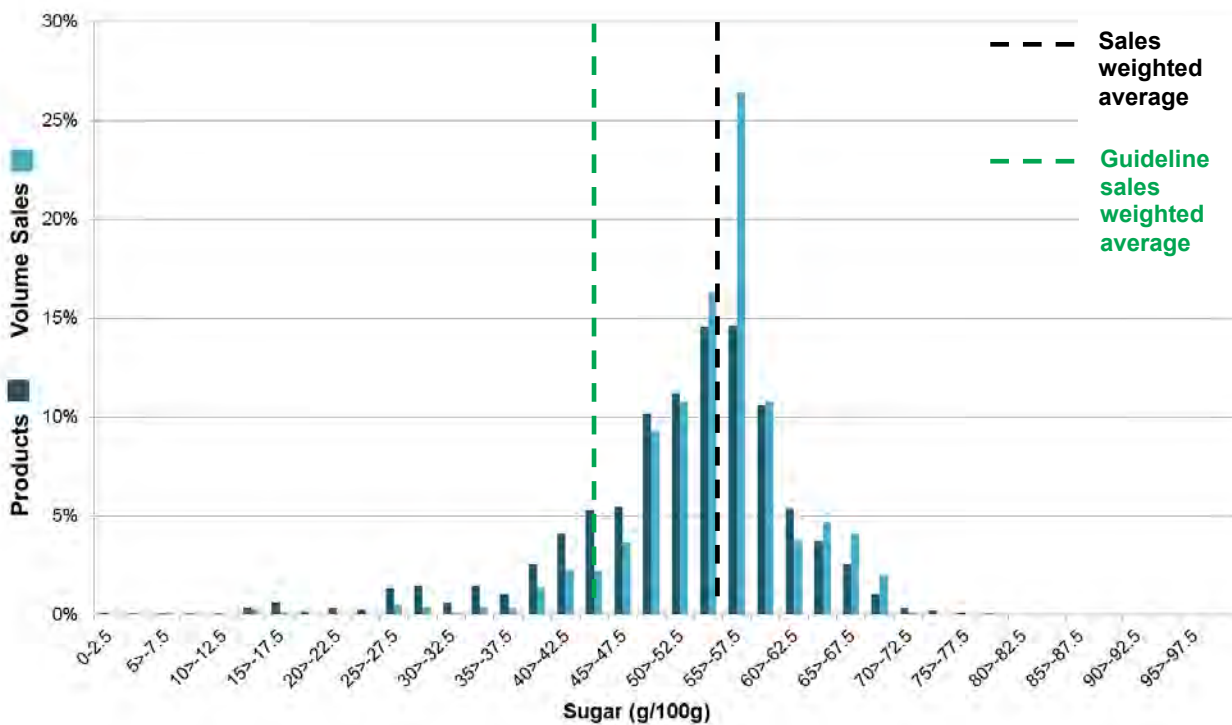
Table 14.1: Sales weighted averages and ranges of sugar (g/100g) in chocolate confectionery in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	54.5g	54.4g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	65%	75%
Range of total sugar content across products in category (min-max, g per 100g)	0.9g – 81.5g	1.2g – 81.5g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	47.8g – 65.5g	47.9g – 68.9g
SWA calories per portion (for single serve products)	183 kcal	178 kcal

Table 14.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

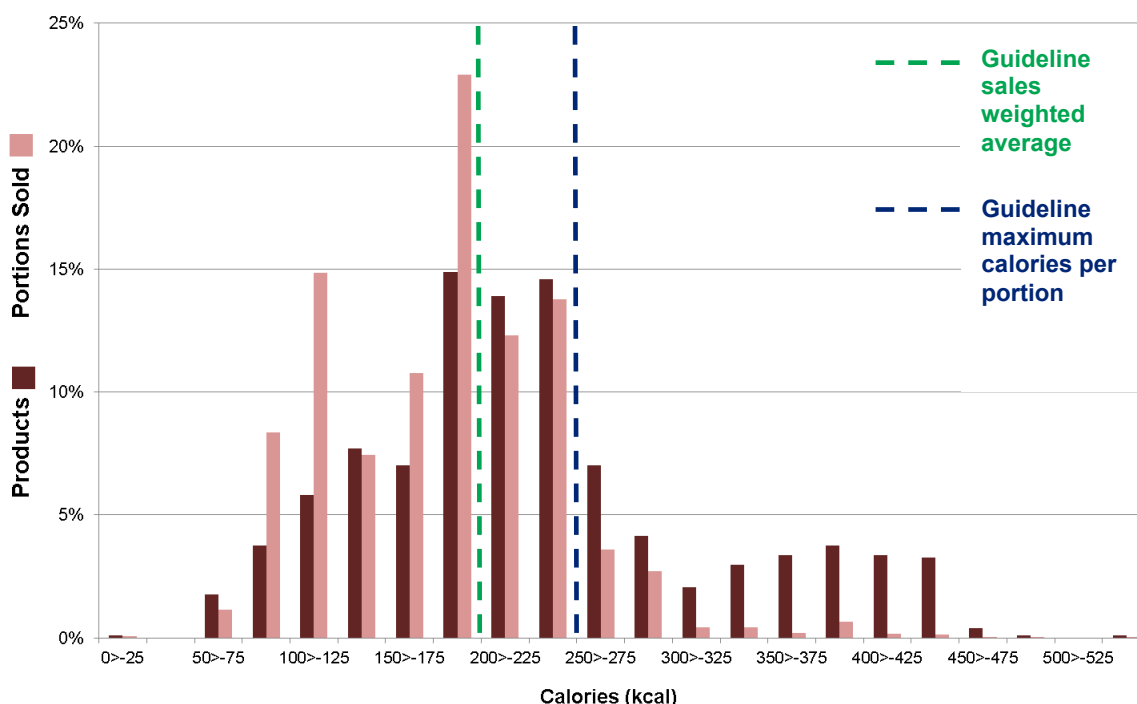
	Manufacturers	Retailers
Market share (% volume sales)	85.1%	14.9%
SWA total sugar content (g per 100g)	54.9g	51.4g
SWA calories per portion (for single serve products)	178 kcal	180 kcal

Graph 4.1: Chocolate confectionery – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (2699 products)

Graph 4.2: Chocolate confectionery – distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (1014 products)

Chocolate spreads in the retail and manufacturing sectors

Table 15.1: Sales weighted averages and ranges of sugar (g/100g) in chocolate spreads in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	55.7g	54.8g
% of top sugar contributors at/below current baseline SWA total sugar content*	69%	67%
Range of total sugar content across products in category (min-max, g per 100g)	34.0g – 62.0g	28.9g – 59.9g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	36.2g – 60.0g	36.0g – 59.6g

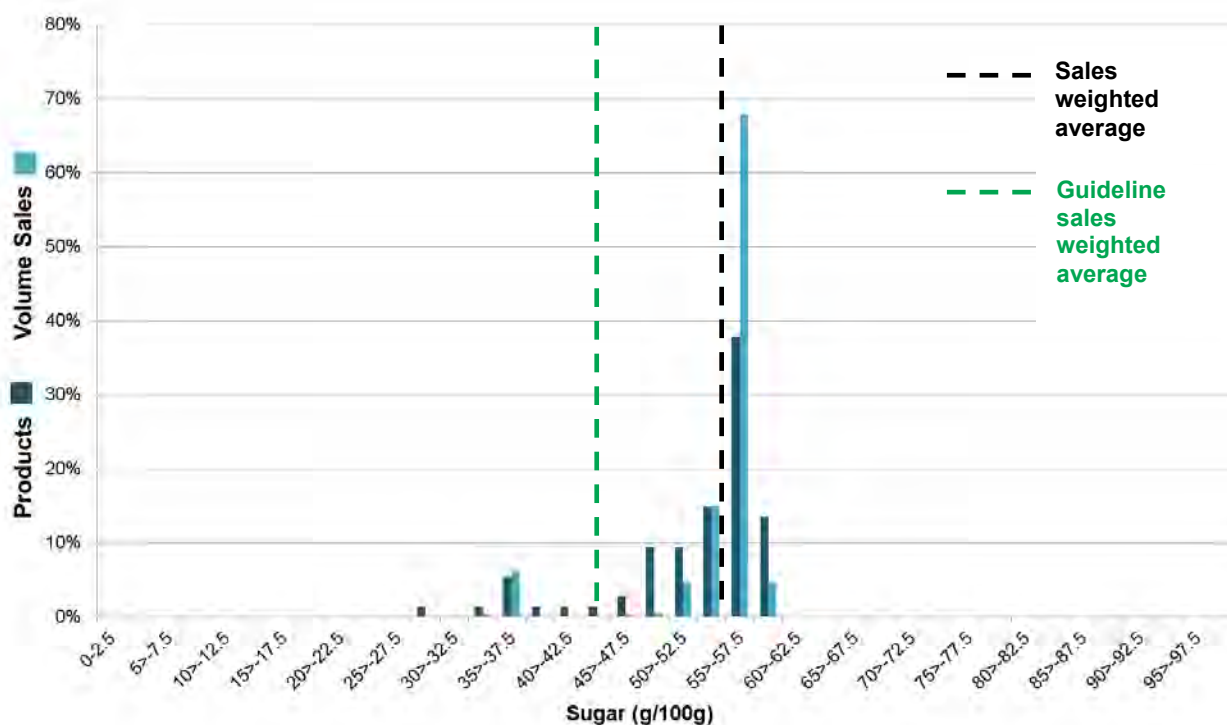
*Data available for 18 retailers and manufacturers in 2015, and 16 in 2014

Table 15.2: 2015 market share and sales weighted averages for sugar (g/100g) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	72.3%	27.7%
SWA total sugar content (g per 100g)	55.5g	52.9g

Figures in italics highlight a small sample size (< 50 products)

Graph 5.1: Chocolate spreads – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (74 products)

Dessert toppings/sauces in the retail and manufacturing sectors

Table 16.1: Sales weighted averages and ranges of sugar (g/100g) in dessert toppings/sauces in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	31.6g	48.3g
% of top sugar contributors at/below current baseline SWA total sugar content*	67%	60%
Range of total sugar content across products in category (min-max, g per 100g)	2.0g – 79.5g	4.8g – 85.0g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	11.8g – 79.5g	11.8g – 85.0g

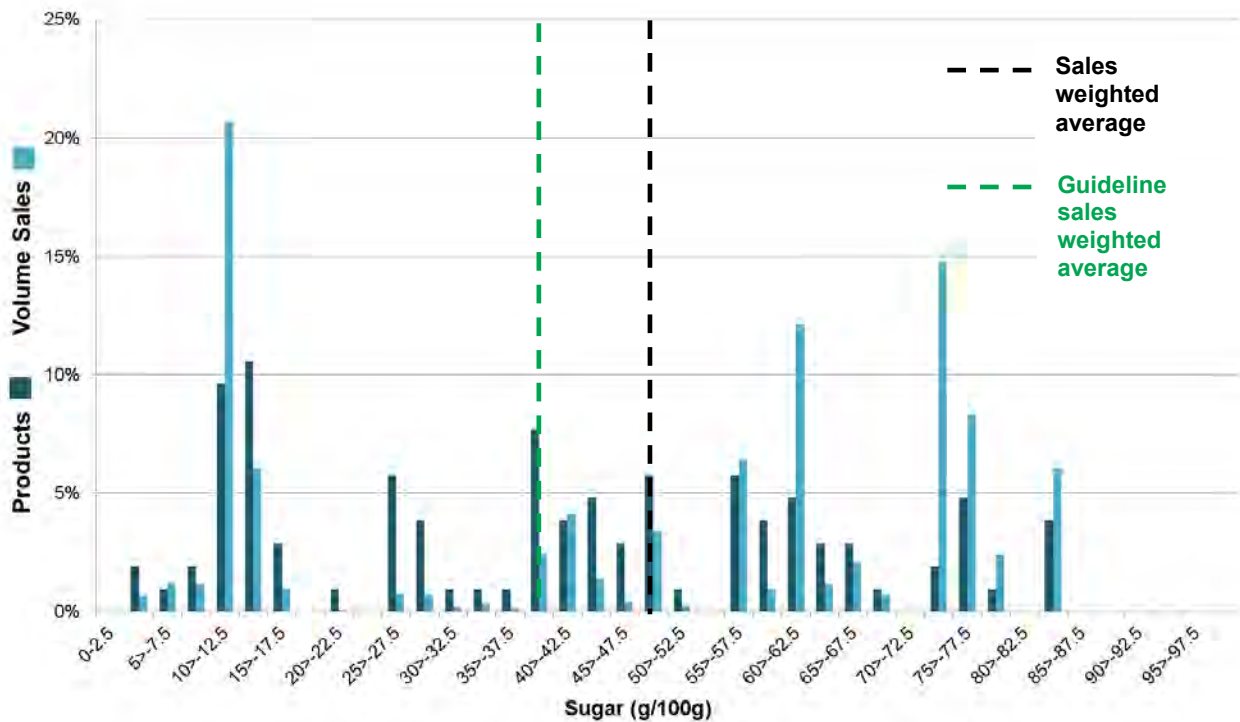
*Data available for 20 retailers and manufacturers in 2015, and 18 in 2014

Table 16.2: 2015 market share and sales weighted averages for sugar (g/100g) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	82.5%	17.5%
SWA total sugar content (g per 100g)	<i>52.7g</i>	27.9g

Figures in italics highlight a small sample size (< 50 products)

Graph 6.1: Dessert toppings/sauces – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (104 products)

Fruit spreads in the retail and manufacturing sectors

Table 17.1: Sales weighted averages and ranges of sugar (g/100g) in fruit spreads in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	46.2g	43.2g
% of top sugar contributors at/below current baseline SWA total sugar content*	83%	50%
Range of total sugar content across products in category (min-max, g per 100g)	2.0g – 71.4g	2.0g – 59.0g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	2.4g – 71.4g	2.4g – 59.0g

Figures in italics highlight a small sample size (< 50 products)

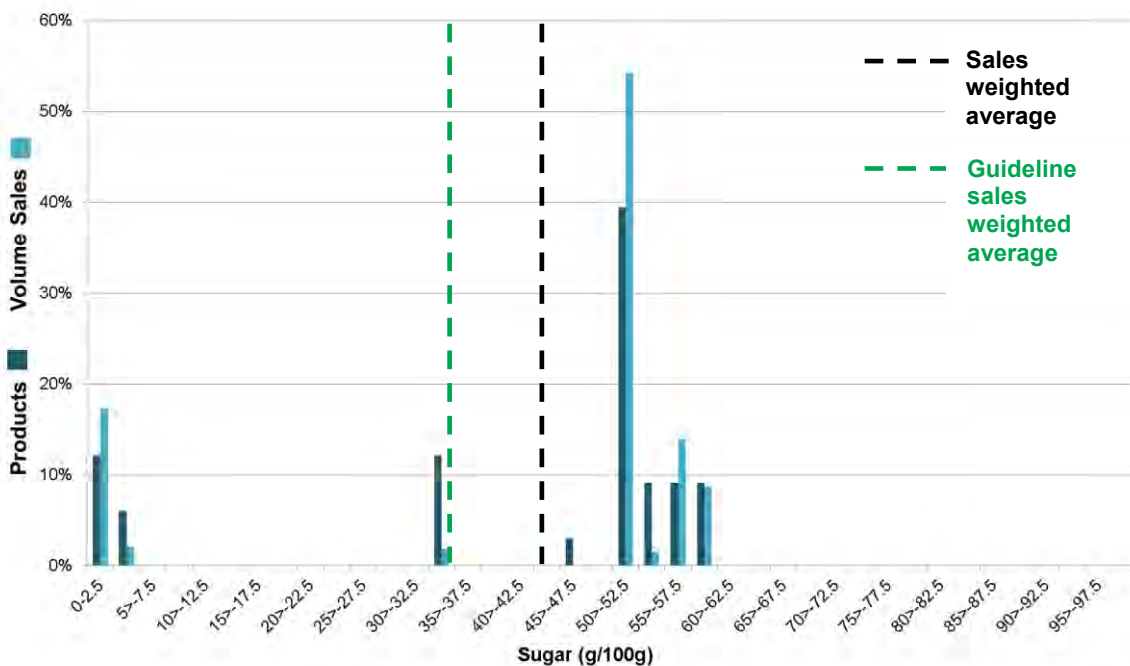
*Data available for 6 retailers and manufacturers in 2015 and in 2014

Table 17.2: 2015 market share and sales weighted averages for sugar (g/100g) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	99.9%	0.1%
SWA total sugar content (g per 100g)*	43.2g	-

*SWA not available for retailers due to a sample of less than 10 products

Graph 7.1: Fruit spreads – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (33 products)

Ice cream in the retail and manufacturing sectors

Table 18.1: Sales weighted averages and ranges of sugar (g/100g) in ice cream in 2015 (baseline) and 2014 (provided only for comparison)

Figures for sugar in g/100ml are presented in brackets

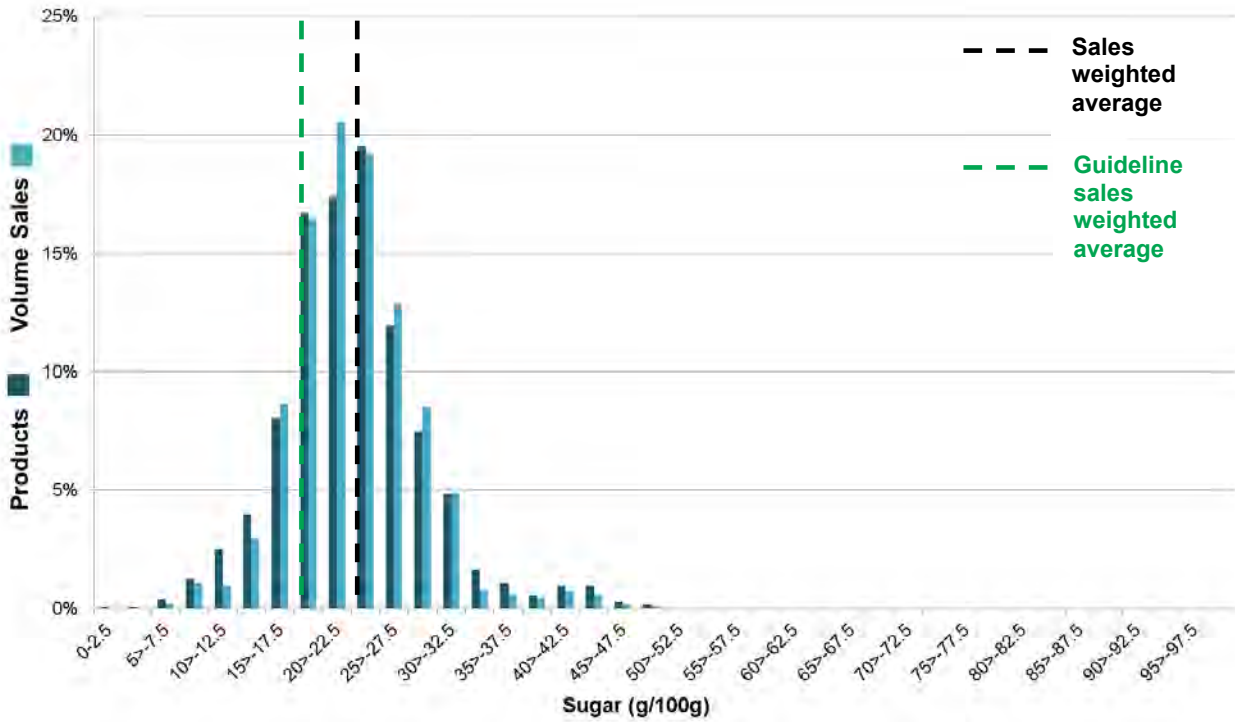
	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	22.6g (13.6g)	22.9g (13.9g)
% of top 20 sugar contributors at/below current baseline SWA total sugar content	60%	70%
Range of total sugar content across products in category (min-max, g per 100g)	1.1g – 52.8g (0.9g – 36.0g)	1.8g – 49.7g (1.2g – 32.0g)
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	17.0g – 33.7g (9.5g – 20.0g)	17.0g – 31.0g (8.0g – 24.0g)
SWA calories per portion (for single serve products)	142 kcal	145 kcal

Table 18.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

Figures for sugar in g/100ml are presented in brackets

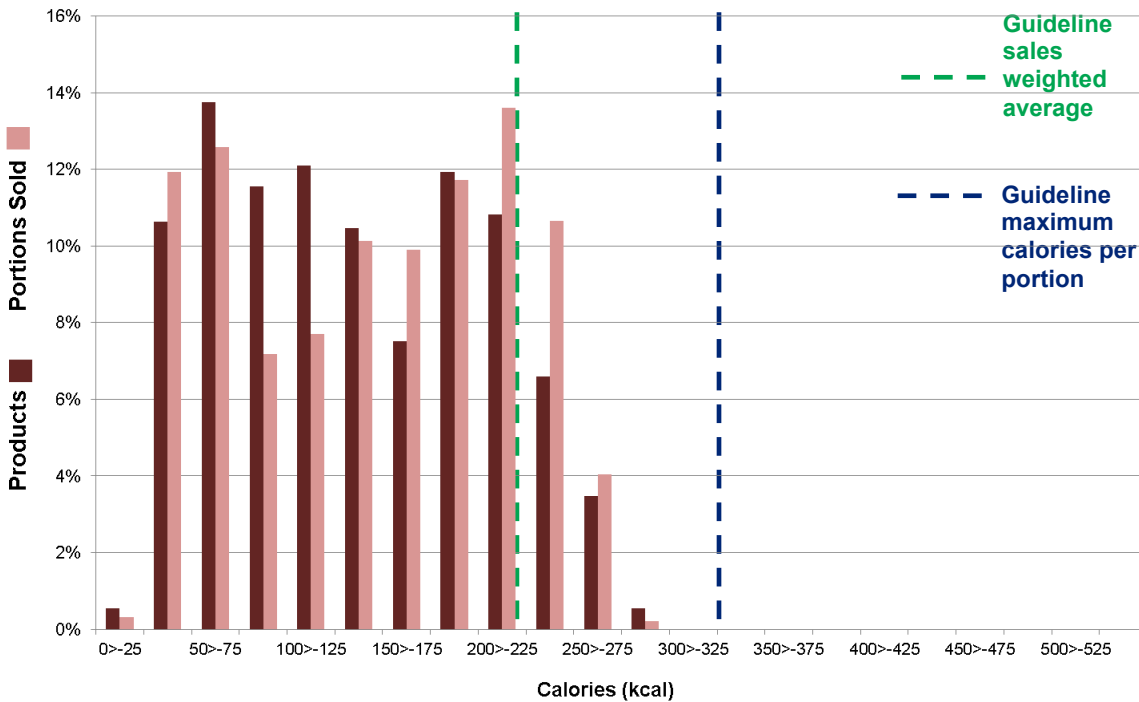
	Manufacturers	Retailers
Market share (% volume sales)	49.1%	50.9%
SWA total sugar content (g per 100g)	22.9g (14.1g)	22.9g (13.8g)
SWA calories per portion (for single serve products)	147 kcal	144 kcal

Graph 8.1: Ice cream – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (1030 products)

Graph 8.2: Ice cream – distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (545 single serve products)

Morning goods in the retail and manufacturing sectors

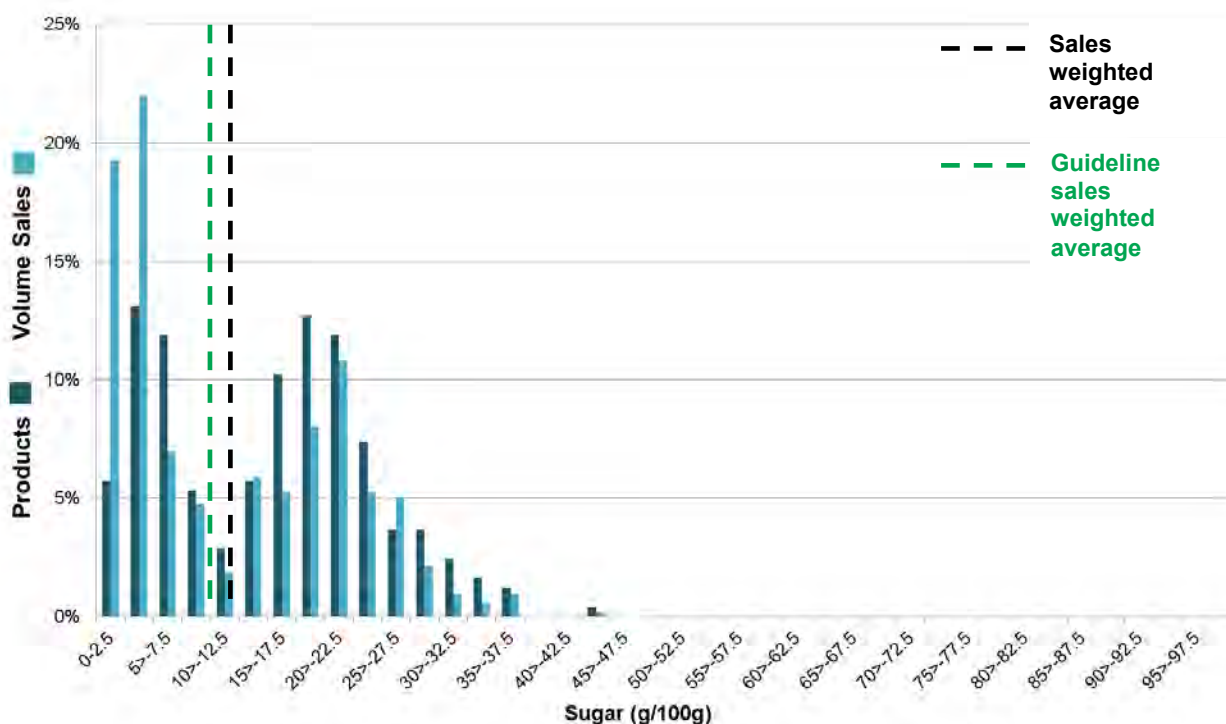
Table 19.1: Sales weighted averages and ranges of sugar (g/100g) in morning goods in 2014 (2015 data are not available for this category)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	12.0g	N/A
% of top 20 sugar contributors at/below current baseline SWA total sugar content	35%	N/A
Range of total sugar content across products in category (min-max, g per 100g)	1.0g – 44.2g	N/A
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	2.0g – 35.2g	N/A
SWA calories per portion (for single serve products)	179 kcal	N/A

Table 19.1: 2014 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

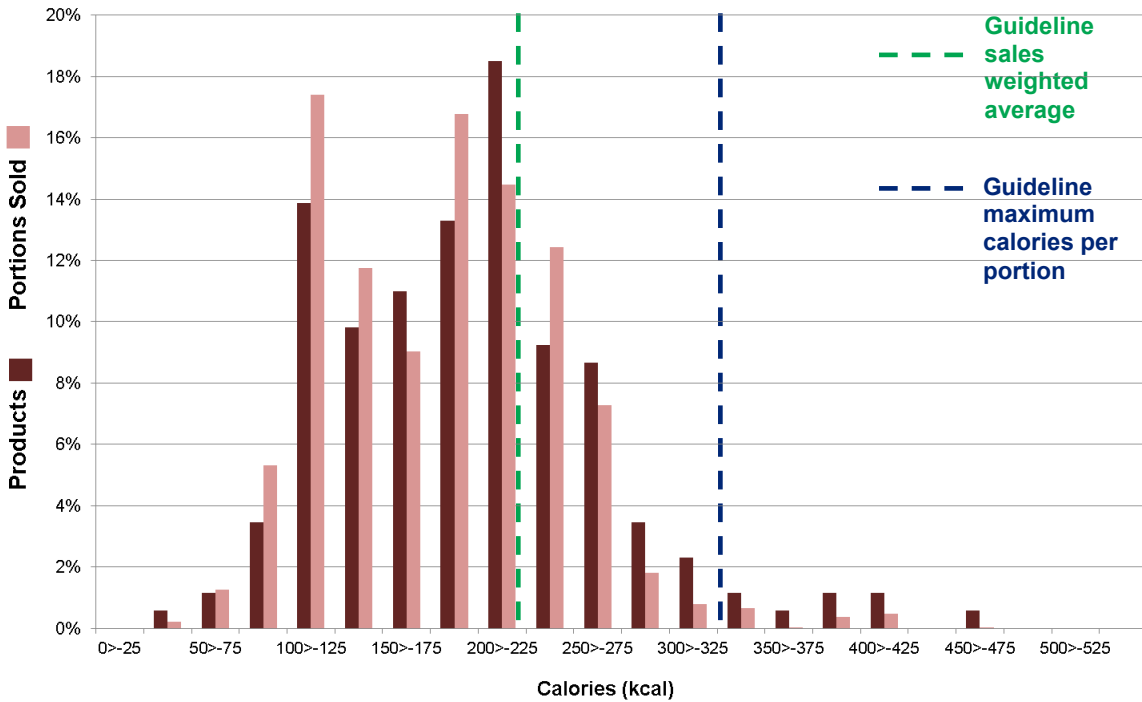
	Manufacturers	Retailers
Market share (% volume sales)	46.0%	54.0%
SWA total sugar content (g per 100g)	8.0g	15.3g
SWA calories per portion (for single serve products)	185 kcal	177 kcal

Graph 9.1: Morning goods – distribution of sugar content (g/100g) in 2014



Source: Kantar GB 2014 take home consumer panel data and nutrition information supplied by businesses (244 products)

Graph 9.1: Morning goods – distribution of calories per portion for single serve products in 2014



Source: Kantar GB 2014 take home consumer panel data and nutrition information supplied by businesses (173 products)

Peanut butter in the retail and manufacturing sectors

Table 20.1: Sales weighted averages and ranges of sugar (g/100g) in peanut butter in 2015 (baseline) and 2014 (provided only for comparison)

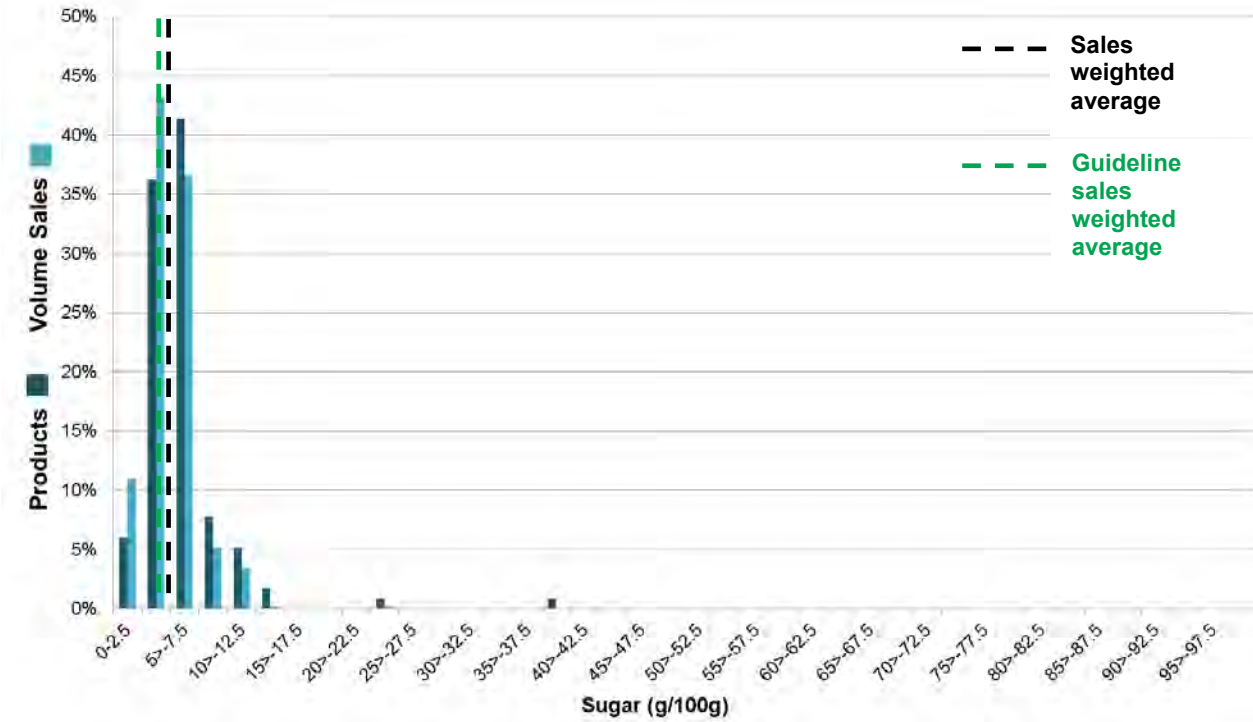
	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	5.6g	4.9g
% of top sugar contributors at/below current baseline SWA total sugar content*	41%	25%
Range of total sugar content across products in category (min-max, g per 100g)	1.7g – 26.7g	0.9g – 39.6g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	2.3g – 26.7g	2.3g – 10.6g

*Data available for 20 retailers and manufacturers in 2015, and 17 in 2014

Table 20.2: 2015 market share and sales weighted averages for sugar (g/100g) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	39.6%	60.4%
SWA total sugar content (g per 100g)	5.3g	4.7g

Graph 10.1: Peanut butter – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (116 products)

Puddings in the retail and manufacturing sectors

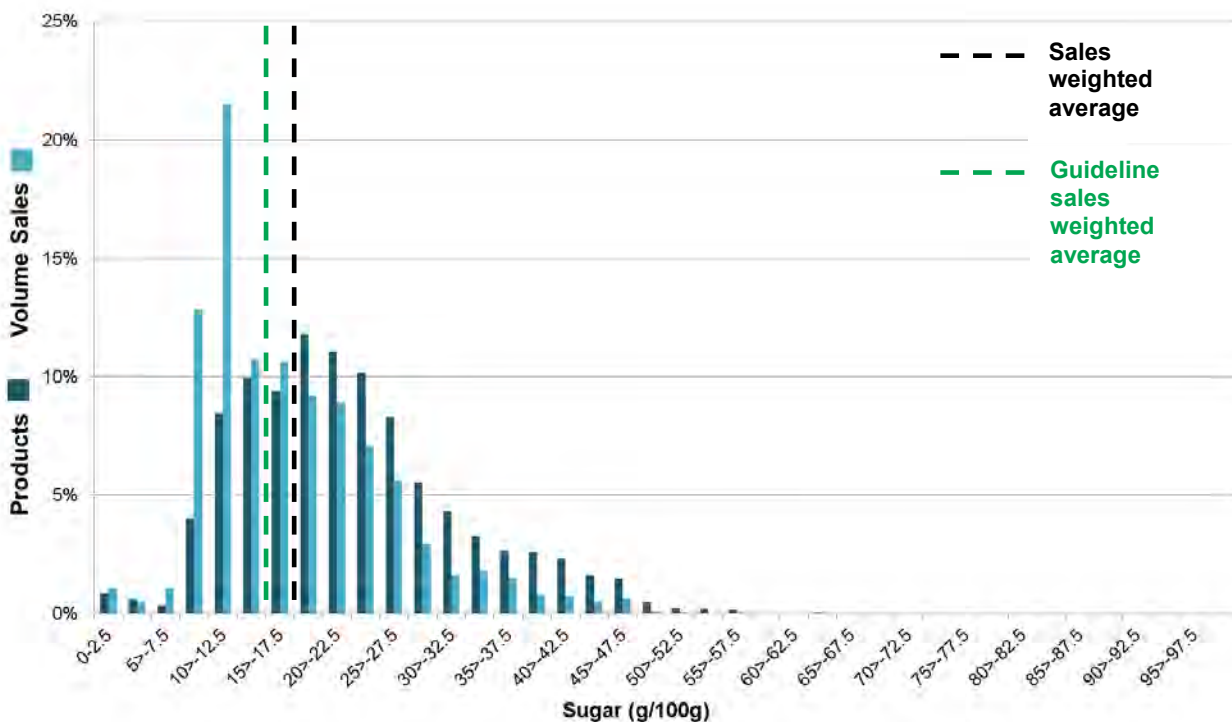
Table 21.1: Sales weighted averages and ranges of sugar (g/100g) in puddings in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	17.3g	17.5g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	35%	25%
Range of total sugar content across products in category (min-max, g per 100g)	0.4g – 64.5g	0.1g – 63.1g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	8.9g – 42.1g	8.9g – 43.3g
SWA calories per portion (for single serve products)	167 kcal	174 kcal

Table 21.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

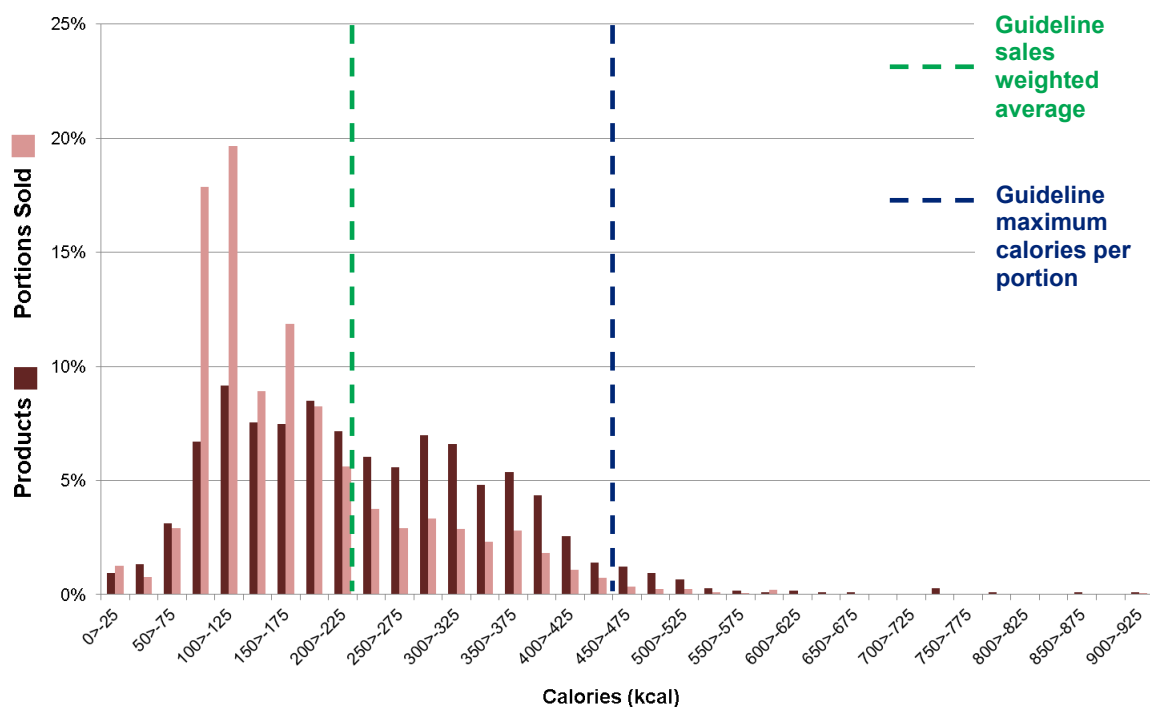
	Manufacturers	Retailers
Market share (% volume sales)	45.2%	54.8%
SWA total sugar content (g per 100g)	15.5g	19.1g
SWA calories per portion (for single serve products)	149 kcal	202 kcal

Graph 11.1: Puddings – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (1988 products)

Graph 11.2: Puddings – distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (1059 single serve products)

Sweet confectionery in the retail and manufacturing sectors

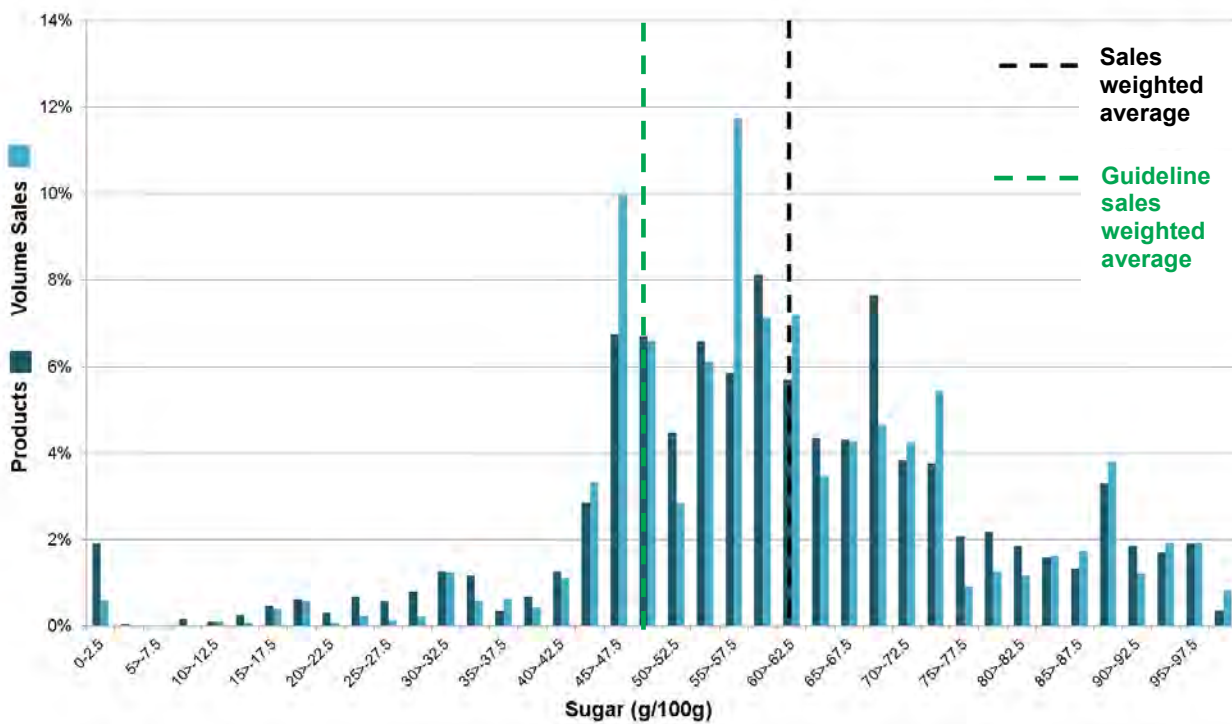
Table 22.1: Sales weighted averages and ranges of sugar (g/100g) in sweet confectionery in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	61.8g	61.1g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	45%	40%
Range of total sugar content across products in category (min-max, g per 100g)	0.1g – 99.8g	0.1g – 99.8g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	52.2g – 97.3g	47.0g – 99.0g
SWA calories per portion (for single serve products)	163 kcal	149 kcal

Table 22.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

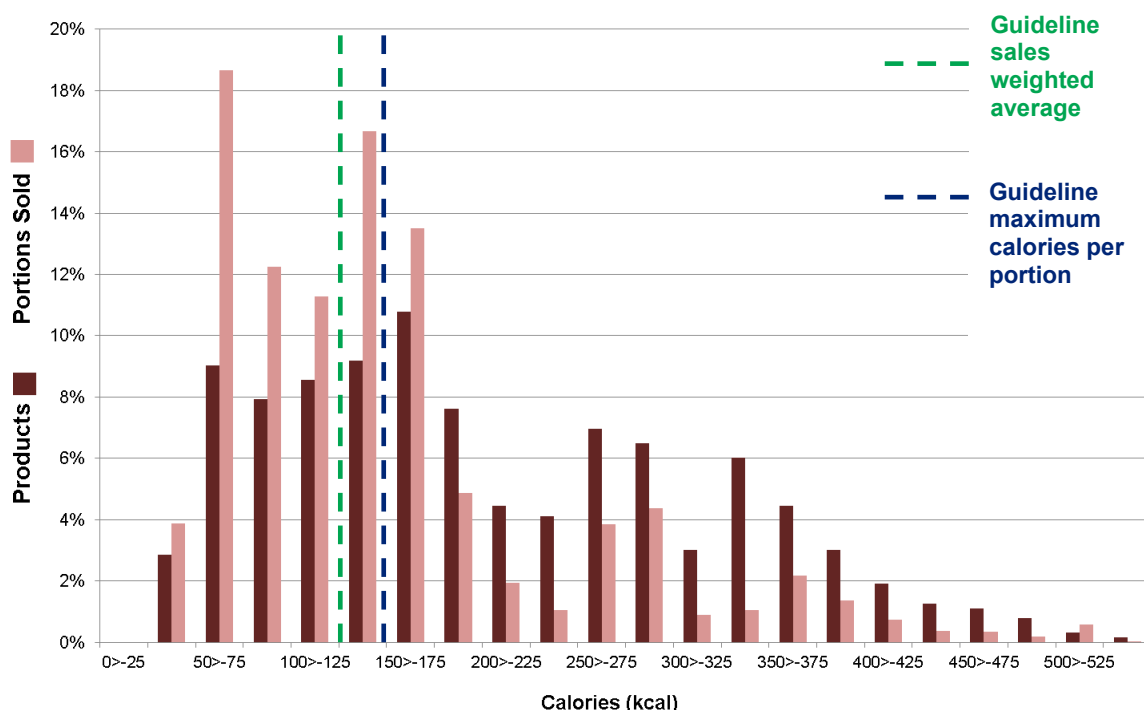
	Manufacturers	Retailers
Market share (% volume sales)	66.3%	33.7%
SWA total sugar content (g per 100g)	61.3g	60.8g
SWA calories per portion (for single serve products)	134	209

Graph 12.1: Sweet confectionery – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (1880 products)

Graph 12.2: Sweet confectionery – distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (631 single serve products)

Yogurts in the retail and manufacturing sectors

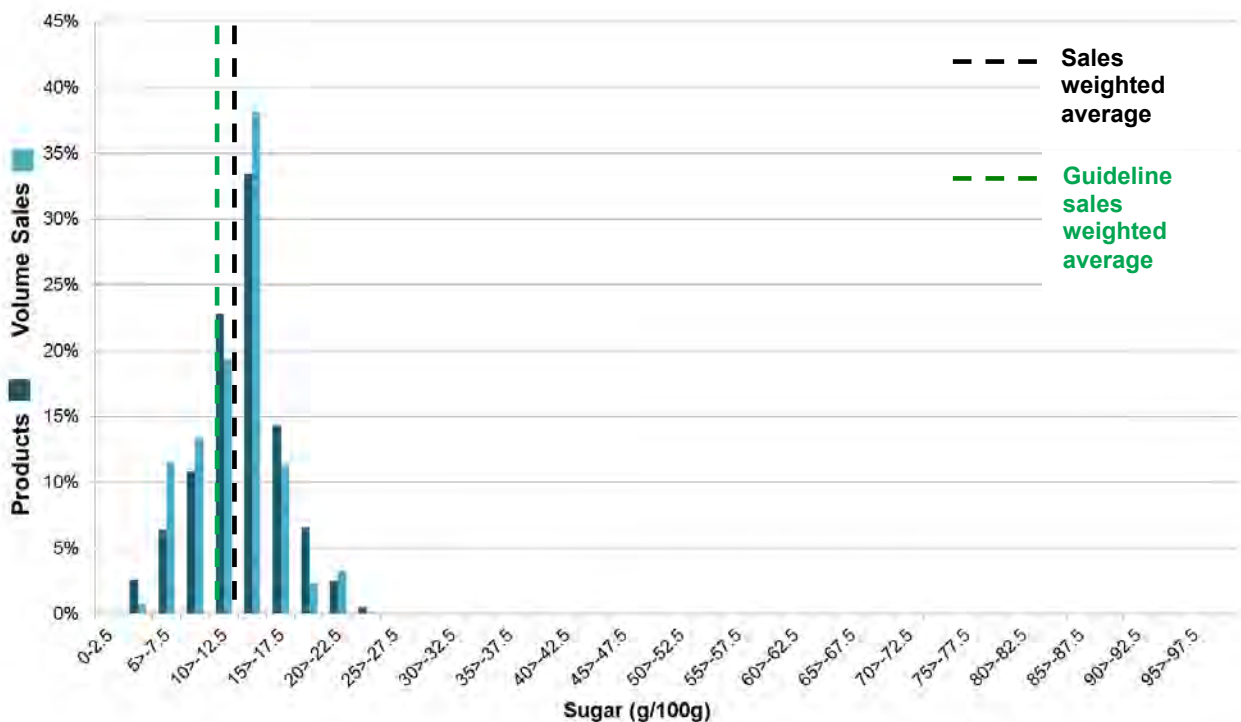
Table 23.1: Sales weighted averages and ranges of sugar (g/100g) in yogurts in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100g)	12.5g	12.4g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	30%	30%
Range of total sugar content across products in category (min-max, g per 100g)	4.0g – 26.6g	4.0g – 24.4g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100g)	7.1g – 17.8g	7.1g – 22.3g
SWA Calories per portion (for single serve products)	130 kcal	129 kcal

Table 23.2: 2015 market share and sales weighted averages for sugar (g/100g) and calories per portion for manufacturers and retailers

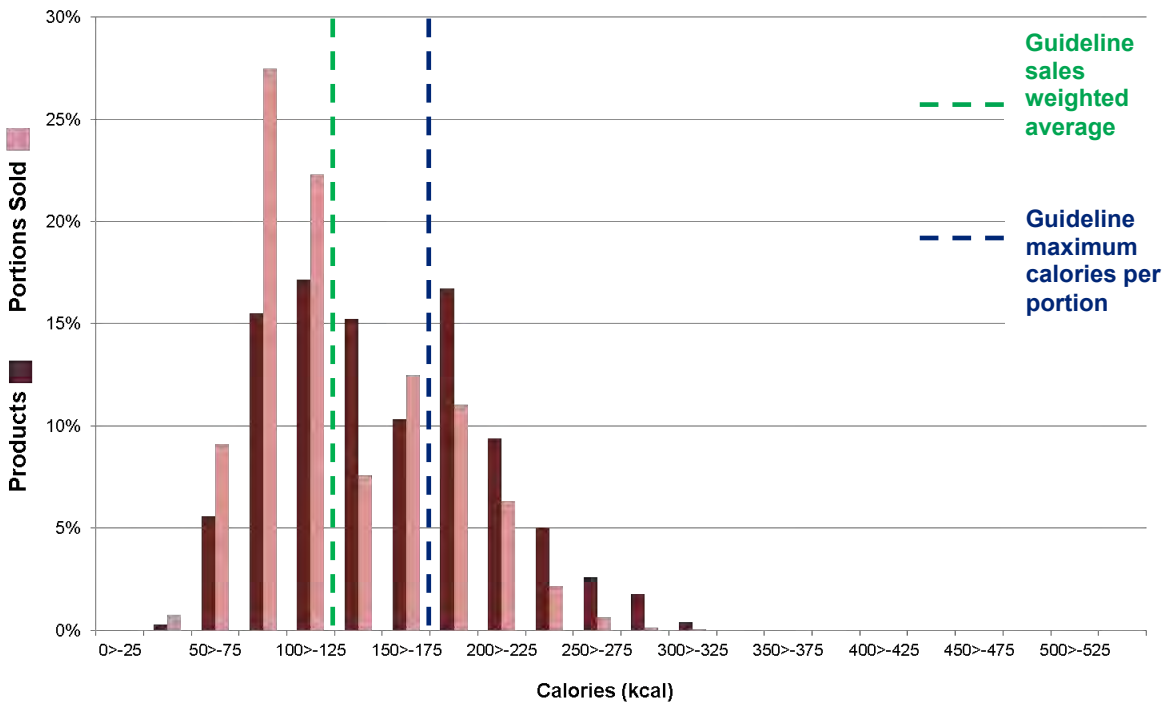
	Manufacturers	Retailers
Market share (% volume sales)	12.2g	13.1g
SWA total sugar content (g per 100g)	78.0%	22.0%
SWA Calories per portion (for single serve products)	127 kcal	133 kcal

Graph 13.1: Yogurts – distribution of sugar content (g/100g) in 2015



Source: Kantar GB 2015 take home consumer panel data (1003 products)

Graph 13.2: Yogurts – distribution of calories per portion for single serve products in 2015



Source: Kantar GB 2015 take home consumer panel data (735 single serve products)

Soft drinks (including fruit juices and smoothies) in the retail and manufacturing sectors

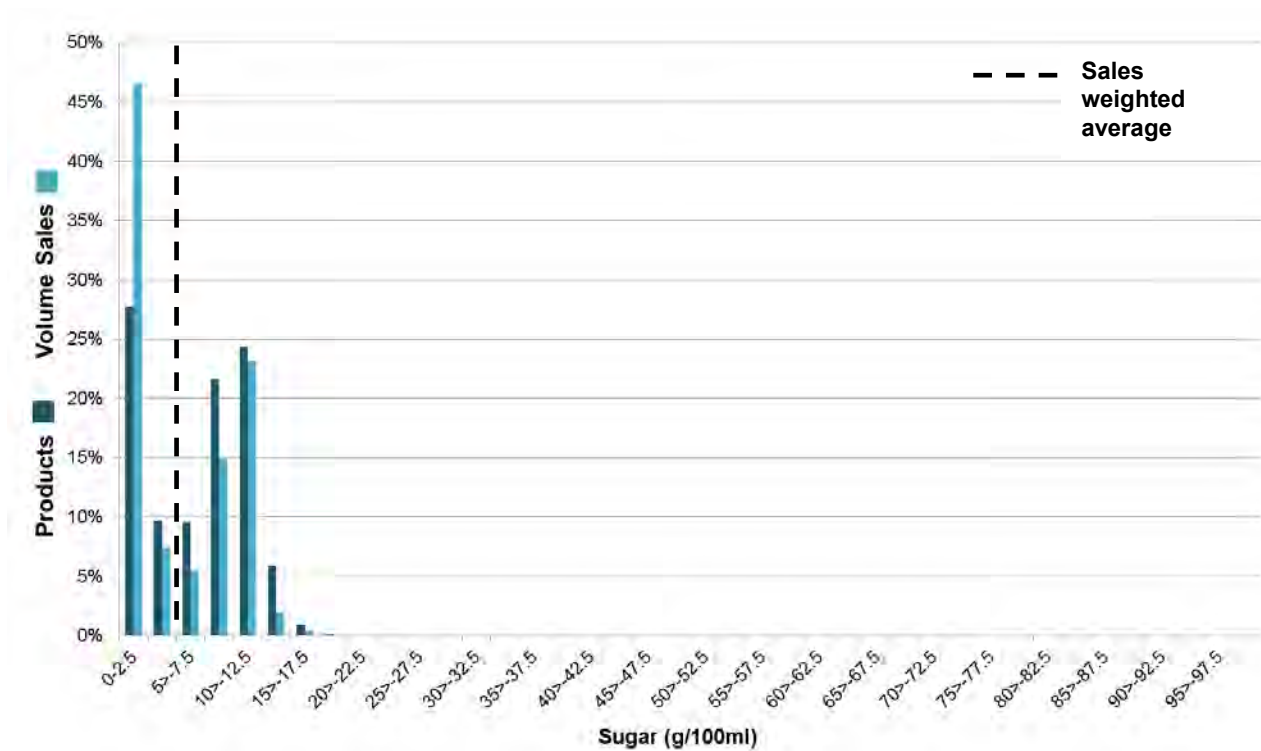
Table 24.1: Sales weighted averages and ranges of sugar (g/100ml) in soft drinks in 2015 (baseline) and 2014 (provided only for comparison)

	2014	2015
Baseline in home retailer and manufacturer sales weighted average (SWA) total sugar content (g per 100ml)	5.3g	5.0g
% of top 20 sugar contributors at/below current baseline SWA total sugar content	40%	40%
Range of total sugar content across products in category (min-max, g per 100ml)	0.0g – 27.3g	0.0g – 25.0g
Range of total sugar content in top 20 products by volume sugar sales (min-max, g per 100ml)	4.2g – 12.5g	7.2g – 12.0g

Table 24.2: 2015 market share and sales weighted averages for sugar (g/100ml) for manufacturers and retailers

	Manufacturers	Retailers
Market share (% volume sales)	57.2%	42.8%
SWA total sugar content (g per 100ml)	5.2g	4.8g

Graph 14.1: Soft drinks – distribution of sugar content (g/100ml) in 2015



Source: Kantar GB 2015 take home consumer panel data (4943 products)

Eating out of home sector

Nutrition information collected by PHE/provided by businesses

As detailed in the methodology section, sales data from the eating out of home sector have been supplied by NPD, and nutrition data either provided by businesses or found online by PHE. Nutrition data has been collected in different formats (per portion and/or per 100g); it has not been possible to convert between the two if portion weight is unknown.

Median values have not been calculated or used in sales weighted average calculations where sample sizes for a particular food outlet type are less than 10 products. This minimum was chosen to balance raising the requirement against not limiting the analysis, by ruling out too much of the collected data. Figures in italics indicate a small sample size (less than 50 products). The 95% confidence intervals presented are approximate.

Based on simple averages, sweet confectionery has the highest sugar content (g/100g) of the food categories and breakfast cereals the lowest. Puddings eaten out of home contain the most calories per portion and dessert toppings/sauces the least.

Table 25: Simple average sugar content, portion size and calories per portion of out of home products by category, with sample sizes

Product category	OUT OF HOME					
	Portion size (g) or (ml)	No. products	Sugar (g/100g/ml)	No. products	Calories per portion (kcal)	No. products
Biscuits	61	109	34.4	112	295	108
Breakfast cereals	147	41	12.9	41	229	56
Cakes	105	347	30.3	353	368	479
Chocolate confectionery	35	132	55.5	142	214	61
Chocolate spreads	-	0	-	0	-	0
Dessert topping/sauce	-	5	-	5	89	21
Fruit spreads	-	0	-	0	-	1
Ice cream (g (ml))	125 (224)	132	24.9 (14.1)	133	226	228
Morning goods	108	71	14.7	74	355	79
Peanut butter	-	0	-	0	-	0
Puddings	178	530	21.9	530	458	755
Sweet confectionery	47	101	58.4	200	231	108
Yogurts	175	13	14.3	14	191	23
Drinks (ml)	453	261	7.4	273	215	434

There are five categories for which there was insufficient, or no, available information for further analysis (ie information for a sample of 10 or more products known to be sold in one food outlet type); these are chocolate spreads, dessert toppings/sauces, fruit spreads, peanut butter and yogurts. These categories have therefore been excluded from the next section of the appendix.

Biscuits in the out of home sector

For the biscuits category, nutrition information is available for 19 businesses. Table 26.1 shows the product sample sizes underlying the median figures and confidence intervals in table 26.2.

Table 26.1: Number of out of home biscuit products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	53	56	53
Full service	1	1	4
Pubs	3	3	5
Quick service	17	17	21
Travel and leisure	1	1	1
Workplace	0	0	0
Total	75	78	84

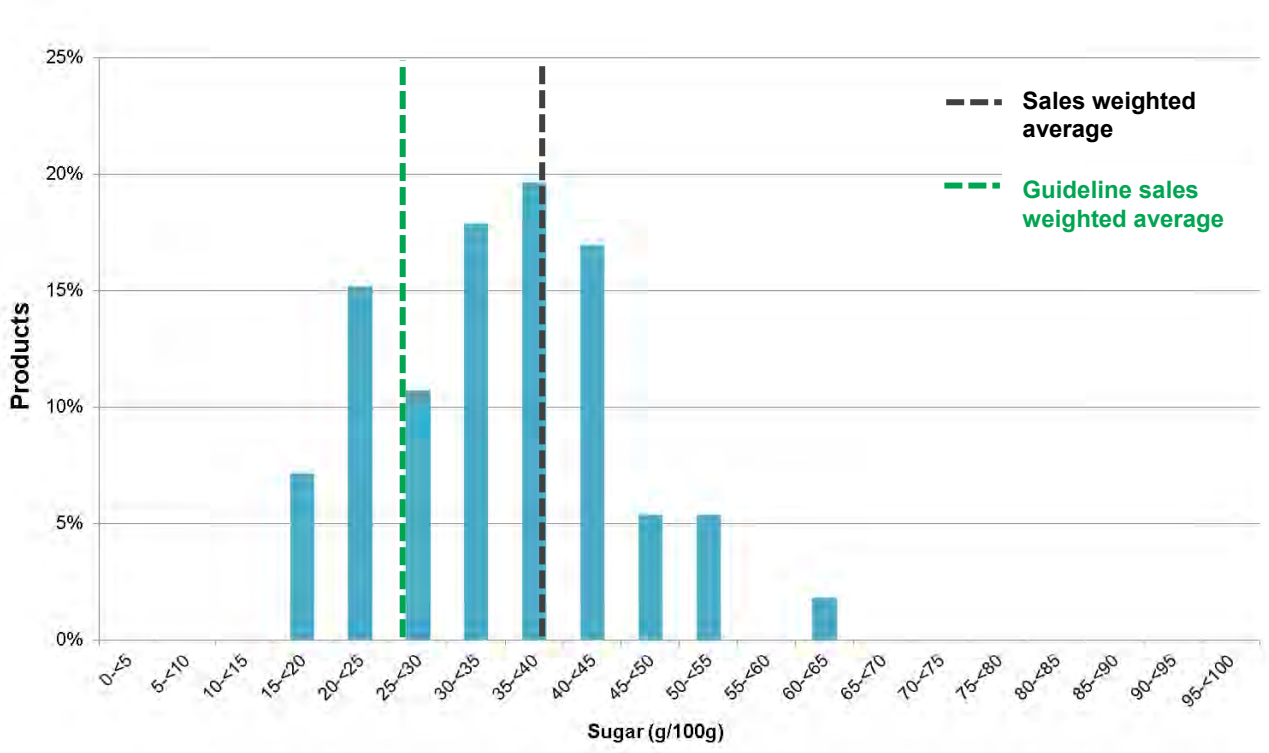
Table 26.2: Median portion size, sugar and calorie content of biscuits by food outlet

Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	60	56 - 71	35.2	33 - 38	266	240 - 331
Full service	-	-	-	-	-	-
Pubs	-	-	-	-	-	-
Quick service	61	45 - 75	38.9	33 - 40	274	218 - 373
Travel and leisure	-	-	-	-	-	-
Workplace	-	-	-	-	-	-

Table 26.3: Biscuits: Baseline statistics for out of home food: 2015

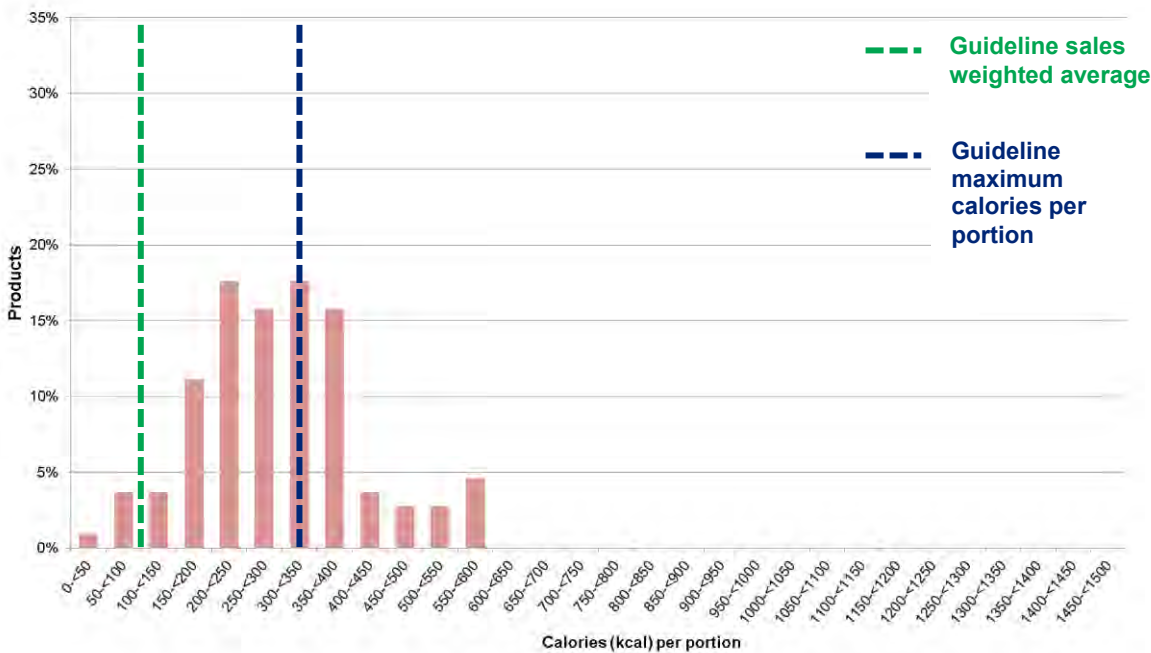
Baseline sales weighted average (SWA) total sugar content (g per 100g)	38.1g
Range of total sugar content across products in category (min-max, g per 100g)	17.3g – 63.1g
Range of total sugar content in products of top coffee shop/restaurant/pub outlets (min-max, g per 100g)	18.0g – 63.1g
SWA calories per portion	272 kcal

Graph 15.1: Biscuits – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 15.2: Biscuits – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Breakfast cereals in the out of home sector

For the breakfast cereals category, nutrition information is available for 10 businesses. Table 27.1 shows the product sample sizes underlying the median figures and confidence intervals in table 27.2.

Table 27.1: Number of out of home breakfast cereal products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	21	21	21
Full service	0	0	0
Pubs	16	16	23
Quick service	4	4	12
Travel and leisure	0	0	0
Workplace	0	0	0
Total	41	41	56

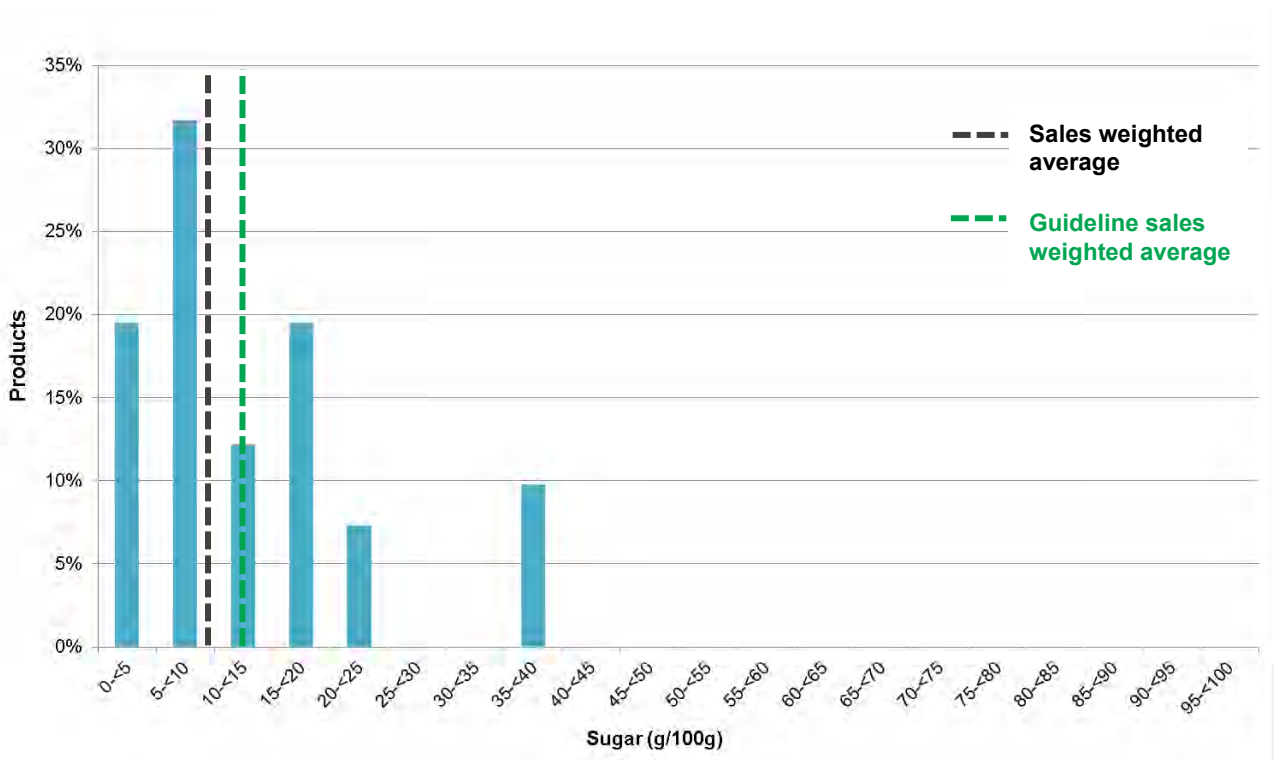
Table 27.2: Median portion size, sugar and calorie content of breakfast cereals by food outlet type

Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	207	155 – 229	8.4	5 – 16	266	212 - 311
Full service	-	-	-	-	-	-
Pubs	35	26 - 50	16.8	9 - 35	135	91 - 229
Quick service	-	-	-	-	296	255 - 370
Travel and leisure	-	-	-	-	-	-
Workplace	-	-	-	-	-	-

Table 27.3: Breakfast cereals: Baseline statistics for out of home food: 2015

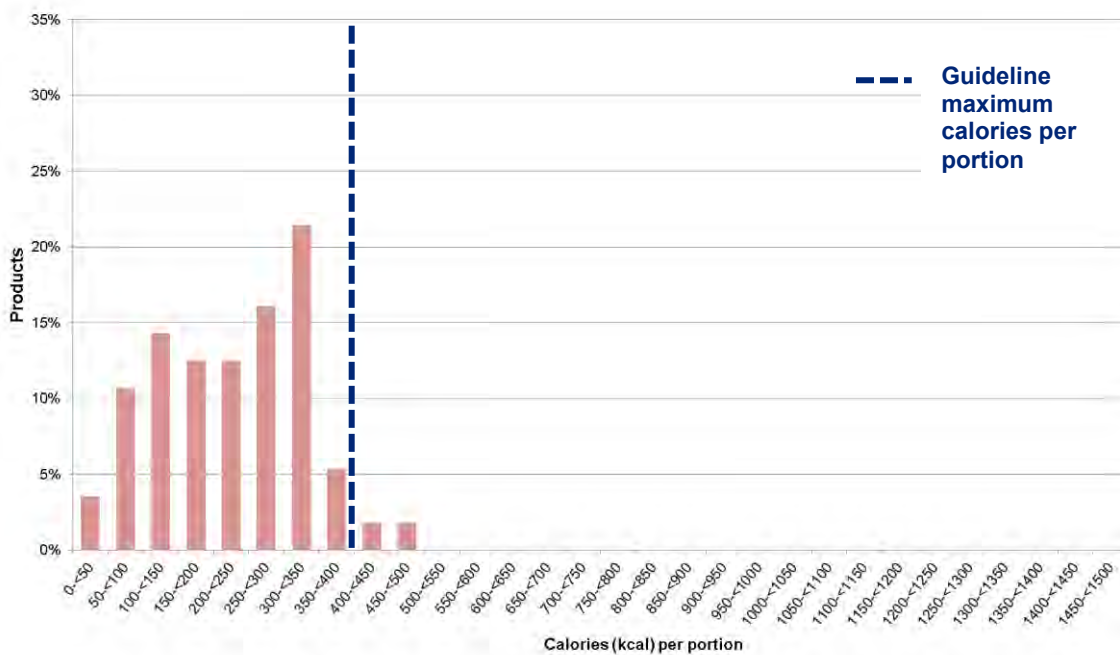
Baseline sales weighted average (SWA) total sugar content (g per 100g)	9.8g
Range of total sugar content across products in category (min-max, g per 100g)	1.3g – 37.0g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	2.4g – 37.0g
SWA calories per portion	246 kcal

Graph 16.1: Breakfast cereals – distribution of sugar (g/100g) content by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 16.2: Breakfast cereals – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Cakes in the out of home sector

For the cakes category, nutrition information is available for 26 businesses. Table 28.1 shows the product sample sizes underlying the median figures and confidence intervals in table 28.2. Cake products sold with ice cream, additional toppings or sauce have been classed as puddings and are not included in the sample below.

Table 28.1: Number of out of home cake products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	102	108	102
Full service	9	9	13
Pubs	3	3	9
Quick service	44	44	164
Travel and leisure	13	13	15
Workplace	0	0	0
Total	171	177	303

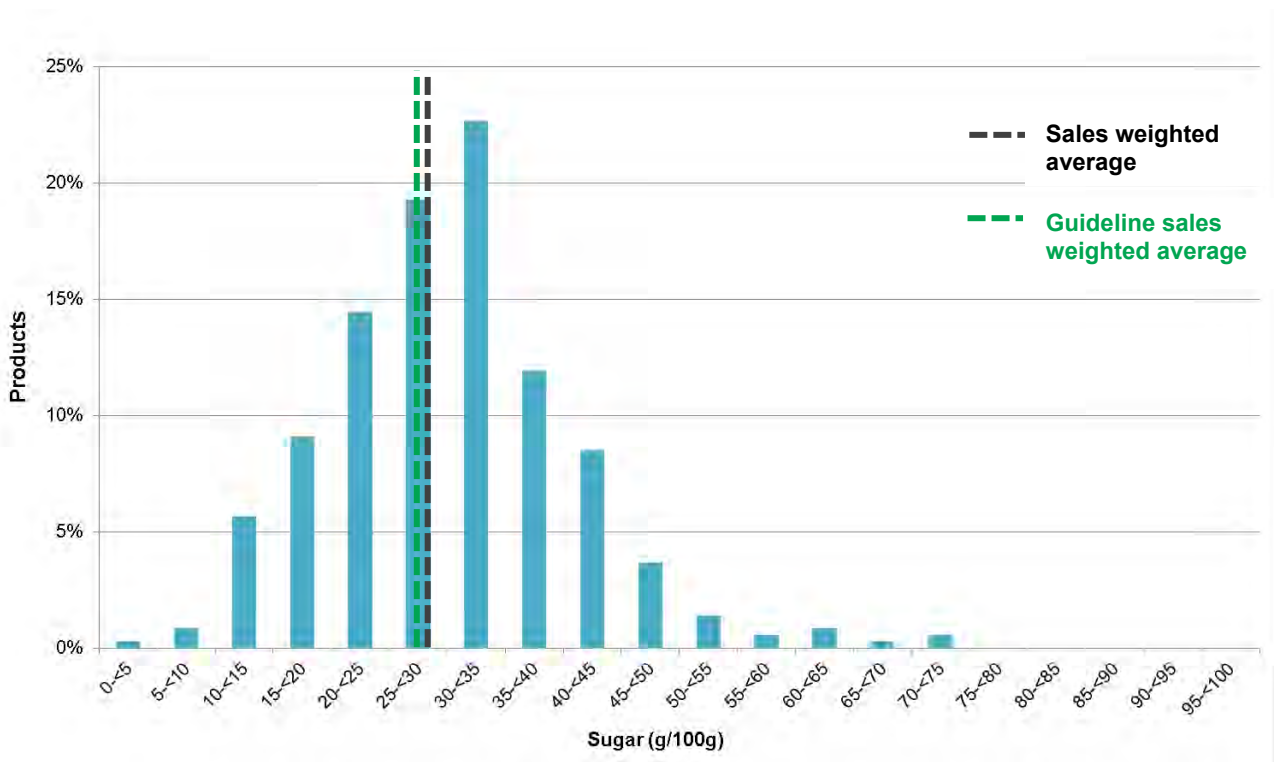
Table 28.2: Median portion size, sugar and calorie content of cakes by food outlet type

Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	90	85 – 101	32.4	31 – 35	403	367 - 424
Full service	-	-	-	-	397	255 - 660
Pubs	-	-	-	-	-	-
Quick service	85	70 - 90	25.0	22 – 29	290	270 - 300
Travel and leisure	100	70 - 100	32.0	28 – 39	391	330 – 433
Workplace	-	-	-	-	-	-

Table 28.3: Cakes: Baseline statistics for out of home food: 2015

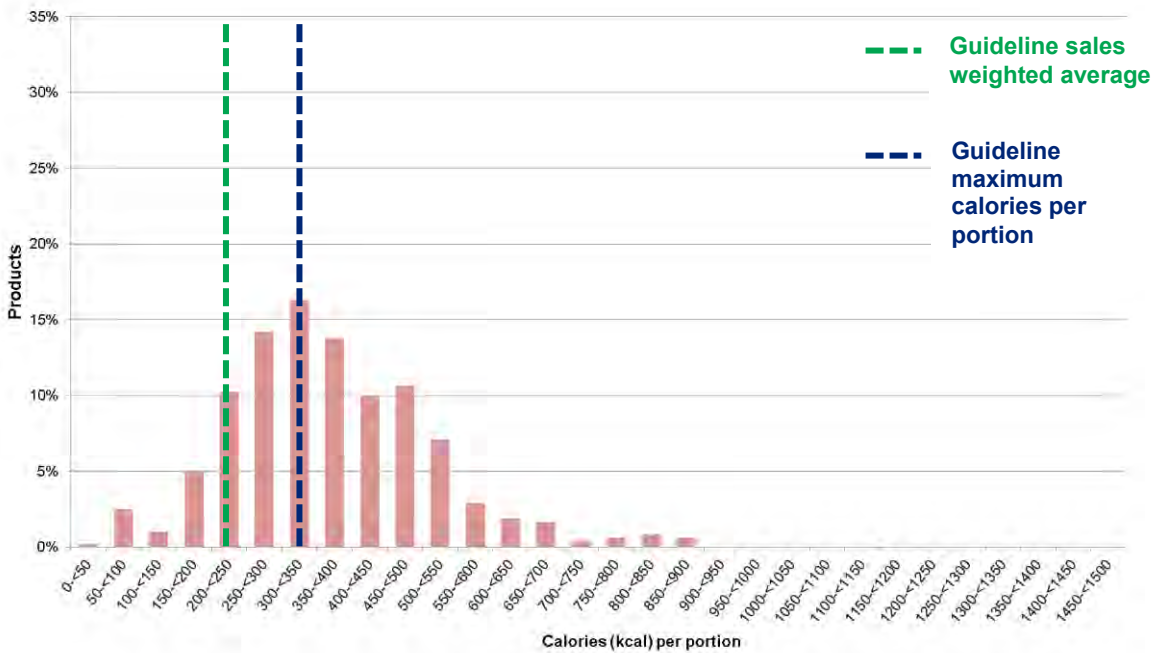
Baseline sales weighted average (SWA) total sugar content (g per 100g)	28.5g
Range of total sugar content across products in category (min-max, g per 100g)	4.5g – 73.3g
Range of total sugar content in products of top chains (min-max, g per 100g)	17.0g – 64.6g
SWA calories per portion	348 kcal

Graph 17.1: Cakes – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 17.2: Cakes – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Chocolate confectionery in the out of home sector

For the chocolate confectionery category, nutrition information is available for 10 businesses. Table 29.1 shows the product sample sizes underlying the median figures and confidence intervals in table 29.2.

Table 29.1: Number of out of home chocolate confectionery products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	7	7	7
Full service	0	0	0
Pubs	5	5	14
Quick service	1	1	7
Travel and leisure	32	42	33
Workplace	0	0	0
Total	45	55	61

Table 29.2: Median portion size, sugar and calorie content of chocolate confectionery by food outlet type

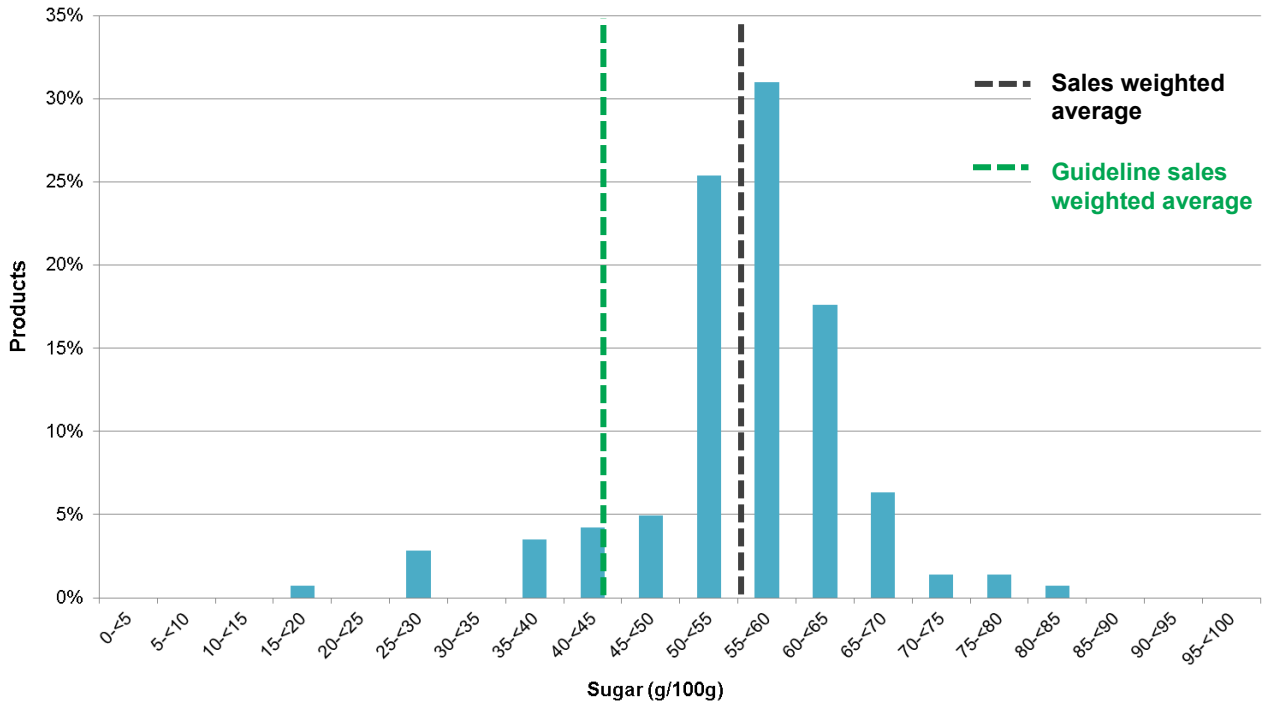
Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	-	-	-	-	-	-
Full service	-	-	-	-	-	-
Pubs	-	-	-	-	66	46 - 171
Quick service	-	-	-	-	-	-
Travel and leisure	59	35 – 66	56.3	54 - 63	302	181 - 332
Workplace	-	-	-	-	-	-

Table 29.3: Chocolate confectionery: Baseline statistics for out of home food: 2015

Baseline simple average total sugar content (g per 100g)*	55.5g
Range of total sugar content across products in category (min-max, g per 100g)	17.1 – 84.2 g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	27.0 – 66.4 g
SWA calories per portion	274 kcal

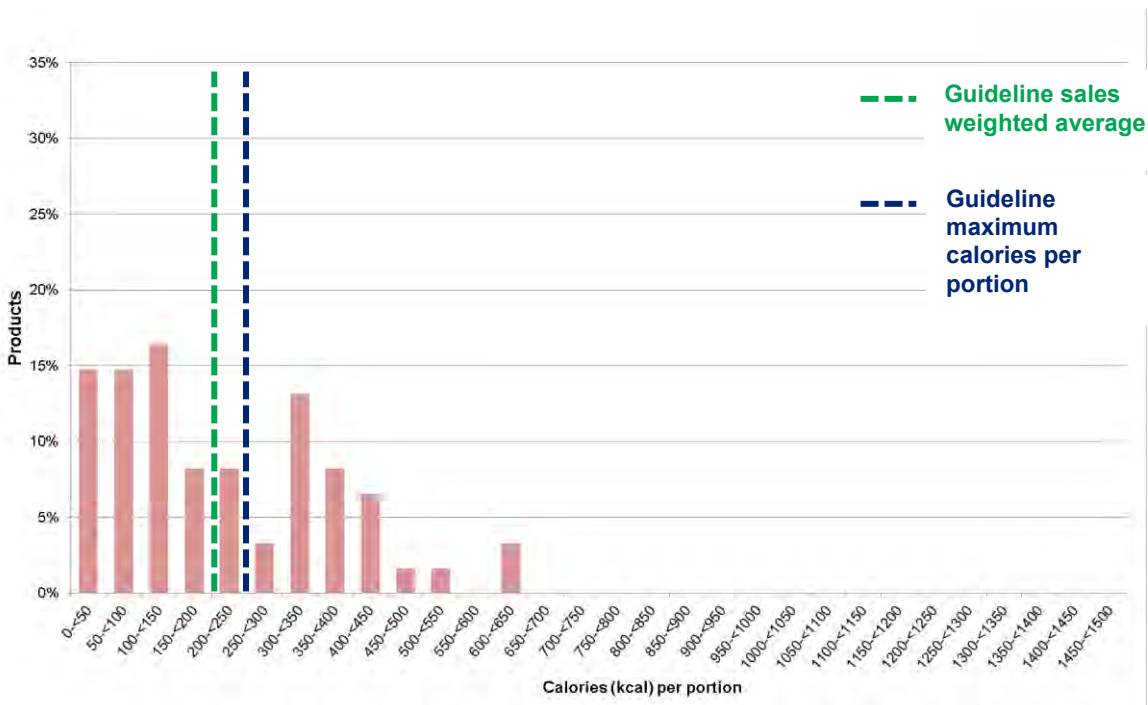
*SWA not given as data available on one food outlet type only

Graph 18.1: Chocolate confectionery – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses

Graph 18.2: Chocolate confectionery – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Ice cream in the out of home sector

For the ice cream category, nutrition information is available for 28 businesses. Table 30.1 shows the product sample sizes underlying the median figures and confidence intervals in table 30.2. Ice cream products sold with additional toppings or sauce have been classed as puddings and are not included in the sample below.

Table 30.1: Number of out of home ice cream products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	3	3	3
Full service	42	42	71
Pubs	3	4	46
Quick service	2	2	19
Travel and leisure	72	72	89
Workplace	0	0	0
Total	122	123	228

Table 30.2: Median portion size, sugar and calorie content of ice cream by food outlet type

Food outlet type	Median portion size* (g (ml))	95% confidence interval	Median sugar** (g/100g(ml))	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	-	-	-	-	-	-
Full service	125 (204)	92 – 198 (162 - 303)	23.3 (15.1)	20 – 25 (12 - 18)	159	120 – 238
Pubs	-	-	-	-	211	141 – 258
Quick service	-	-	-	-	245	190 - 397
Travel and leisure	112 (248)	112 – 112 (248 - 248)	25.4 (11.6)	24 – 27 (11 - 12)	245	234 – 257
Workplace	-	-	-	-	-	-

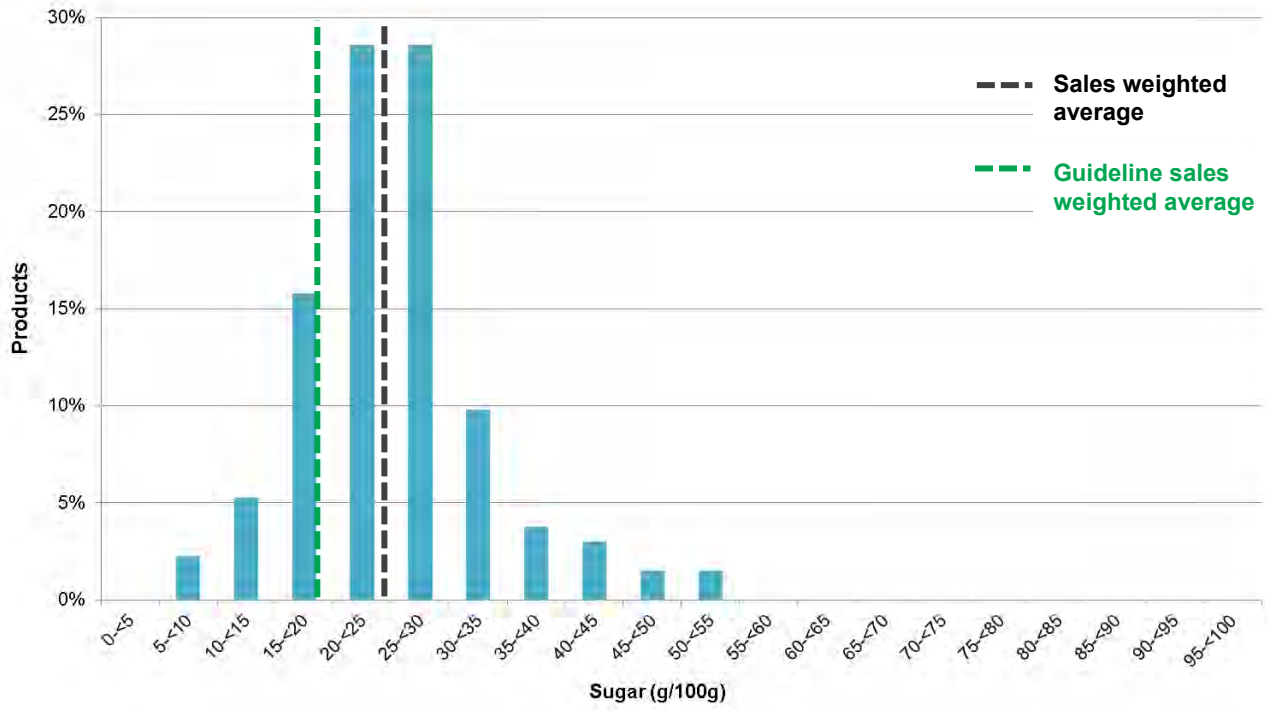
*Portion size in ml is presented in brackets alongside the figures in grams

**Sugar in g per 100ml is presented in brackets alongside the g per 100g figures

Table 30.3: Ice cream: Baseline statistics for out of home food: 2015

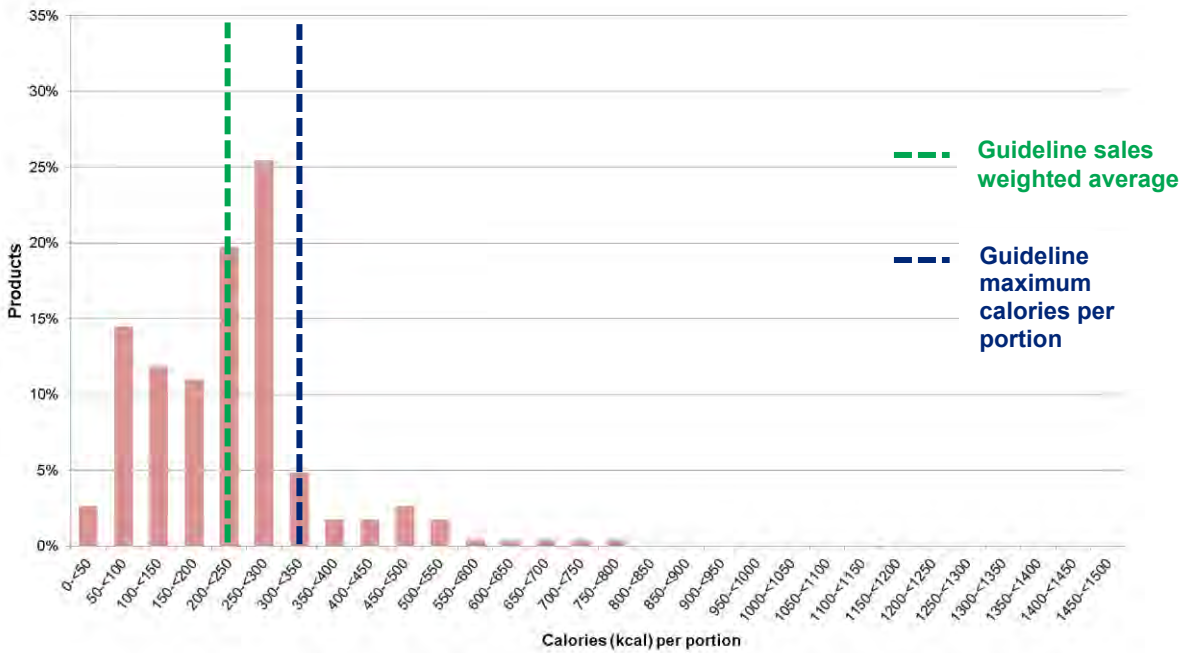
Baseline sales weighted average (SWA) total sugar content (g per 100g (g per 100ml))	24.5g (12.7g)
Range of total sugar content across products in category (min-max, g per 100g)	6.7 – 52.9g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	9.9 – 33.8g
SWA calories per portion	224 kcal

Graph 19.1: Ice cream – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 19.2: Ice cream – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Morning goods in the out of home sector

For the morning goods category, nutrition information is available for 14 businesses. Table 31.1 shows the product sample sizes underlying the median figures and confidence intervals in table 31.2.

Table 31.1: Number of out of home morning goods products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	41	44	41
Full service	0	0	0
Pubs	2	2	6
Quick service	5	5	9
Travel and leisure	0	0	0
Workplace	1	1	1
Total	49	52	57

Table 31.2: Median portion size, sugar and calorie content of morning goods by food outlet type

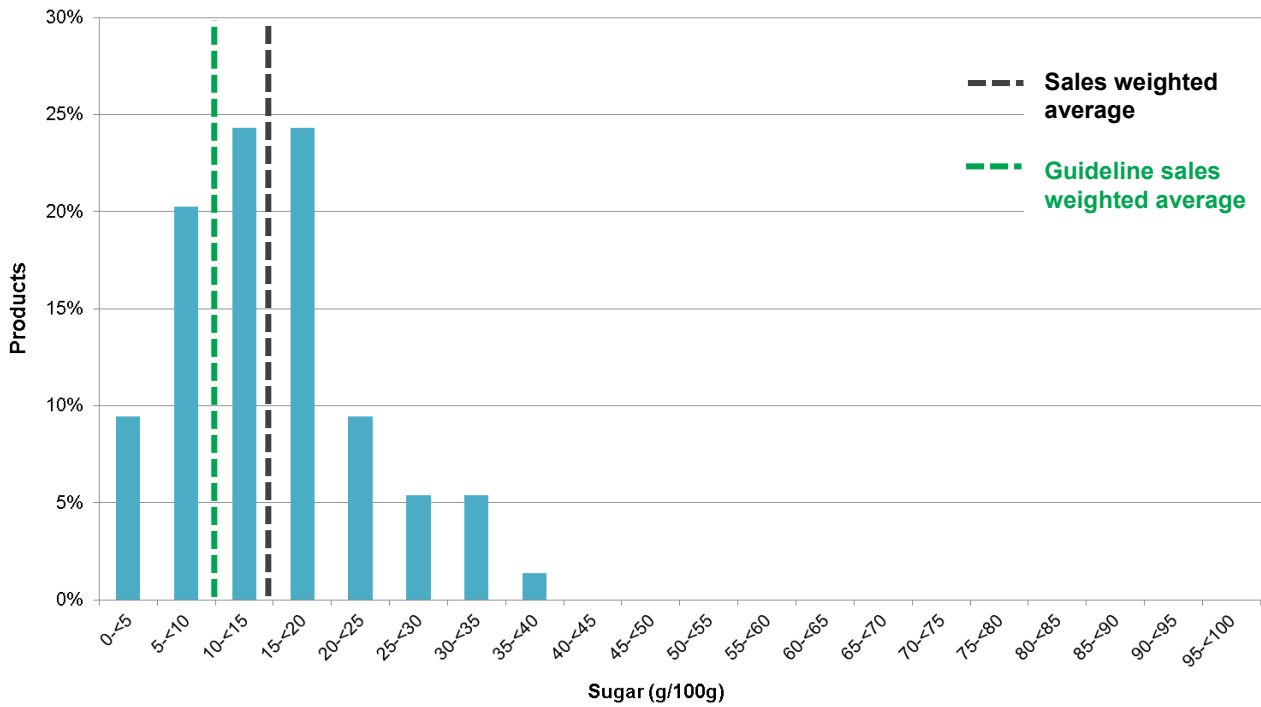
Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	94	86 – 107	14.8	13 – 18	350	315 – 368
Full service	-	-	-	-	-	-
Pubs	-	-	-	-	-	-
Quick service	-	-	-	-	-	-
Travel and leisure	-	-	-	-	-	-
Workplace	-	-	-	-	-	-

Table 31.3: Morning goods: Baseline statistics for out of home food: 2015

Baseline simple average total sugar content (g per 100g)*	14.7g
Range of total sugar content across products in category (min-max, g per 100g)	0.9g – 38.0g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	3.0g – 34.0g
Simple average calories per portion*	355 kcal

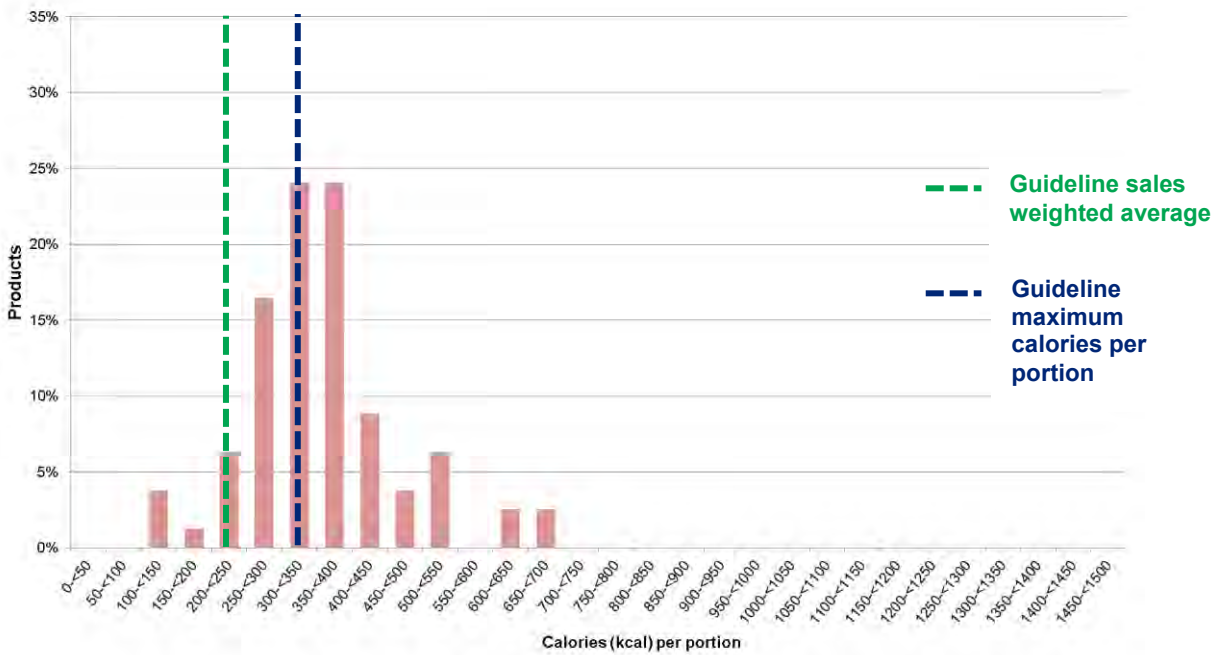
*SWA not given as data available on one food outlet type only

Graph 20.1: Morning goods – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses

Graph 20.2: Morning goods – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses

Puddings in the out of home sector

For the puddings category, nutrition information is available for 33 businesses. Table 32.1 shows the product sample sizes underlying the median figures and confidence intervals in table 32.2. In order to avoid disclosing information relating to individual businesses, medians for the workplace food outlet type group have not been presented, as these data were provided by one contract caterer. These data have been used to calculate the overall SWAs, as well as the simple averages in table 25.

Table 32.1: Number of out of home pudding products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	23	23	23
Full service	37	37	67
Pubs	79	79	226
Quick service	3	3	38
Travel and leisure	0	0	18
Workplace	231	231	231
Total	373	373	603

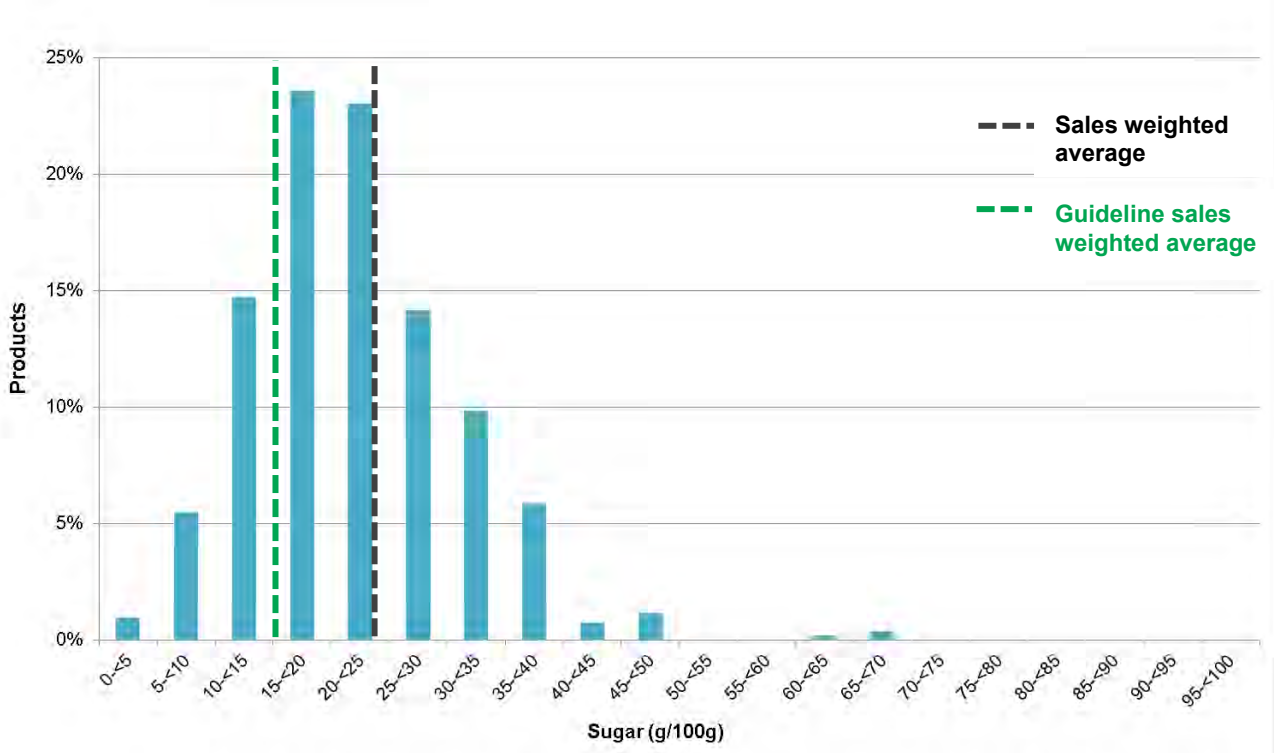
Table 32.3: Median portion size, sugar and calorie content of puddings by food outlet type

Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	75	32 – 97	31.7	27 – 35	308	150 – 404
Full service	159	141 - 195	24.4	22 - 29	445	331 - 542
Pubs	248	211 – 275	24.2	22 – 28	568	534 - 596
Quick service	-	-	-	-	242	201 – 322
Travel and leisure	-	-	-	-	685	565 – 986
Workplace	-	-	-	-	-	-

Table 32.3: Puddings: Baseline statistics for out of home food: 2015

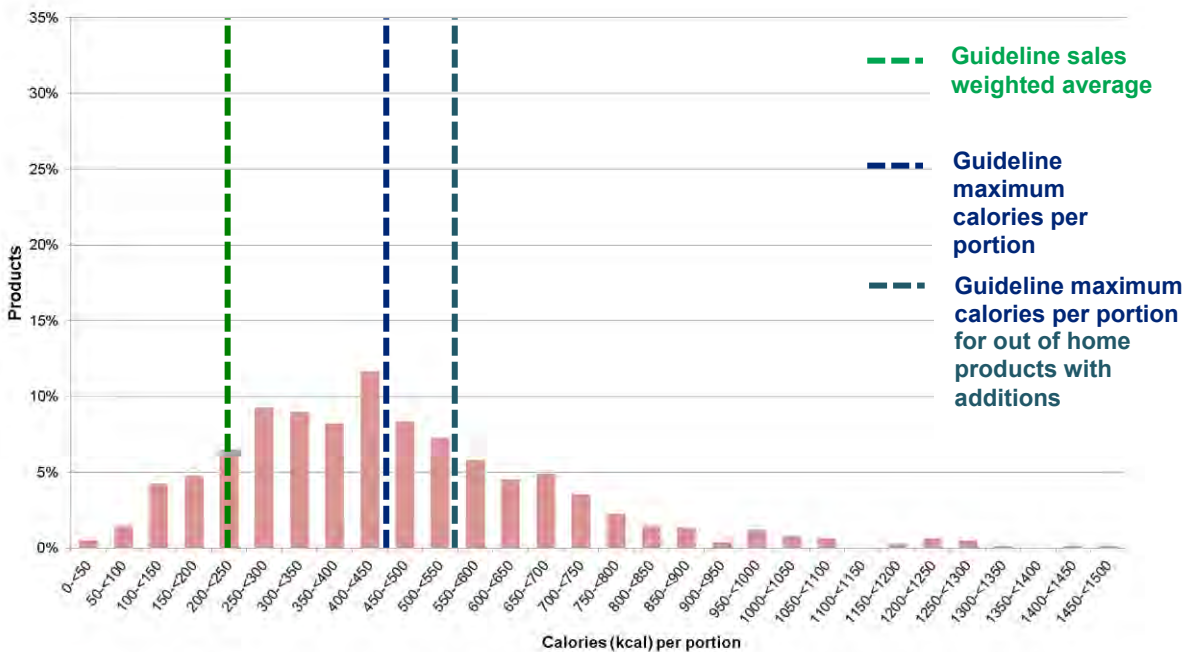
Baseline sales weighted average (SWA) total sugar content (g per 100g)	24.1g
Range of total sugar content across products in category (min-max, g per 100g)	2.5g – 69.0g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	7.6g – 47.0g
SWA calories per portion	447 kcal

Graph 21.1: Puddings – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 21.2: Puddings – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Sweet confectionery in the out of home sector

For the sweet confectionery category, nutrition information is available for 9 businesses. Table 33.1 shows the product sample sizes underlying the median figures and confidence intervals in table 33.2.

Table 33.1: Number of out of home sweet confectionery products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (g)	Sugar content (g/100g)	Calories per portion (kcal)
Coffee shops	6	6	6
Full service	0	0	0
Pubs	2	2	7
Quick service	0	0	2
Travel and leisure	71	170	93
Workplace	0	0	0
Total	79	178	108

Table 33.2: Median portion size, sugar and calorie content of sweet confectionery by food outlet type

Food outlet type	Median portion size (g)	95% confidence interval	Median sugar (g/100g)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	-	-	-	-	-	-
Full service	-	-	-	-	-	-
Pubs	-	-	-	-	-	-
Quick service	-	-	-	-	-	-
Travel and leisure	15	10 – 34	59.0	56 – 62	102	60 - 212
Workplace	-	-	-	-	-	-

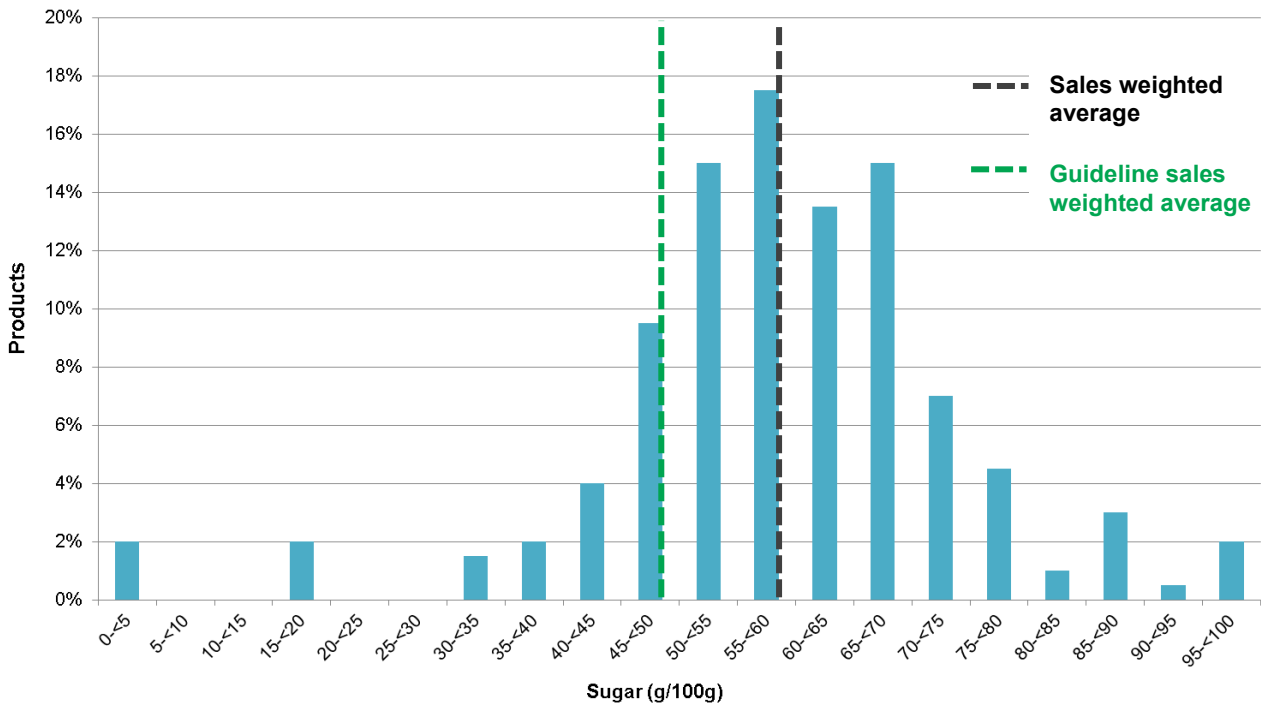
Table 33.3: Sweet confectionery: Baseline statistics for out of home food: 2015

Baseline simple average total sugar content (g per 100g)*	58.4g
Range of total sugar content across products in category (min-max, g per 100g)	0.6g – 99.6g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100g)	40.3g – 71.0g
Simple average calories per portion*	231 kcal

11.

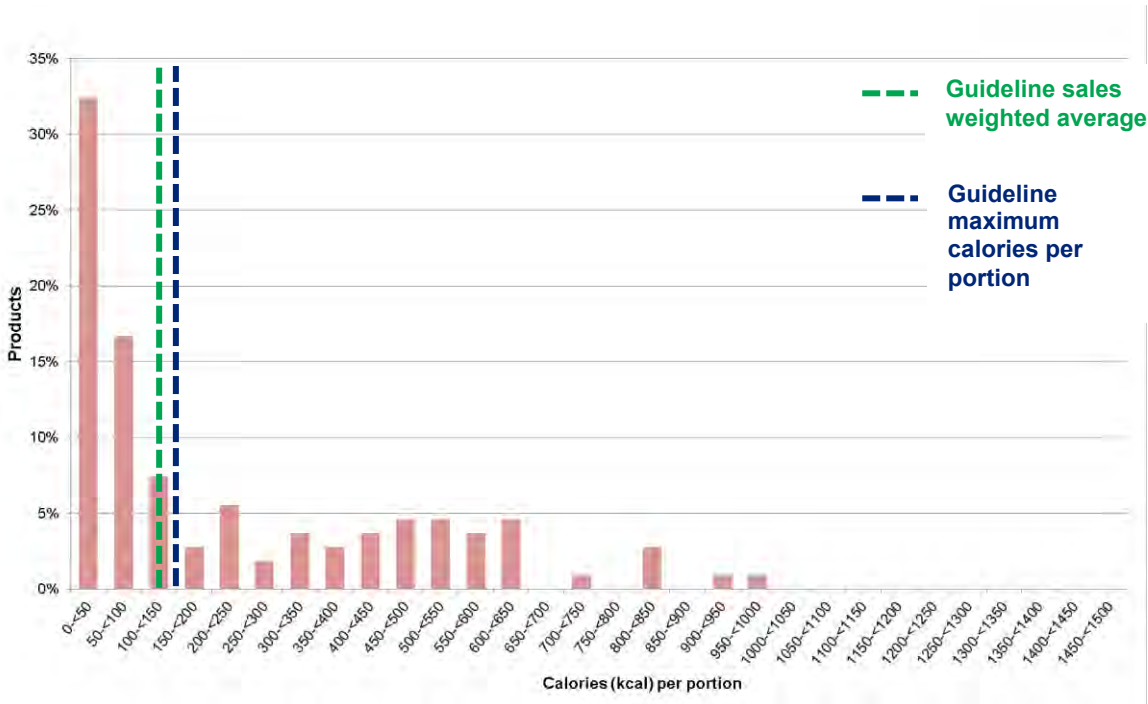
*SWA not given as data available on one food outlet type only

Graph 22.1: Sweet confectionery – distribution of sugar content (g/100g) by % products



Source: Nutrition data collected online or supplied by businesses

Graph 22.2: Sweet confectionery – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses

Soft drinks (including fruit juices and smoothies) in the out of home sector

For the soft drinks category, nutrition information is available for 20 businesses. Table 34.1 shows the product sample sizes underlying the median figures and confidence intervals in table 34.2.

Table 34.1: Number of out of home soft drinks products that were used for median calculations by type of nutrition information and food outlet type

Food outlet type	Number of products		
	Portion size (ml)	Sugar content (g/100ml)	Calories per portion (kcal)
Coffee shops	147	147	154
Full service	0	11	13
Pubs	0	0	0
Quick service	29	30	134
Travel and leisure	85	85	133
Workplace	0	0	0
Total	261	273	434

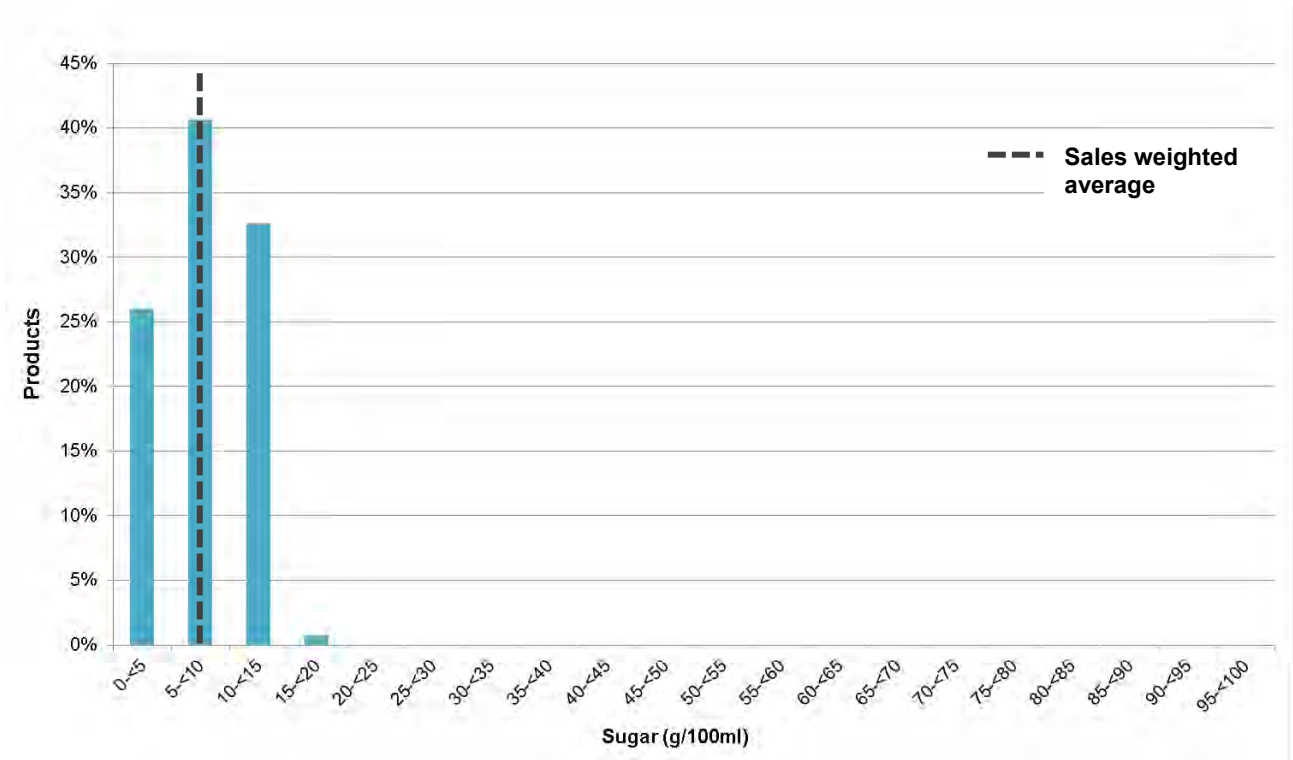
Table 34.2: Median portion size, sugar and calorie content of soft drinks by food outlet type

Food outlet type	Median portion size (ml)	95% confidence interval	Median sugar (g/100ml)	95% confidence interval	Median calories per portion (kcal)	95% confidence interval
Coffee shops	446	436 – 473	9.6	9 - 10	255	225 – 289
Full service	-	-	9.3	7 - 11	146	96 - 186
Pubs	-	-	-	-	-	-
Quick service	330	250 - 400	7.2	0 - 10	180	150 - 219
Travel and leisure	500	500 - 500	5.1	3 - 8	105	79 - 137
Workplace	-	-	-	-	-	-

Table 34.3: Soft drinks: Baseline statistics for out of home food: 2015

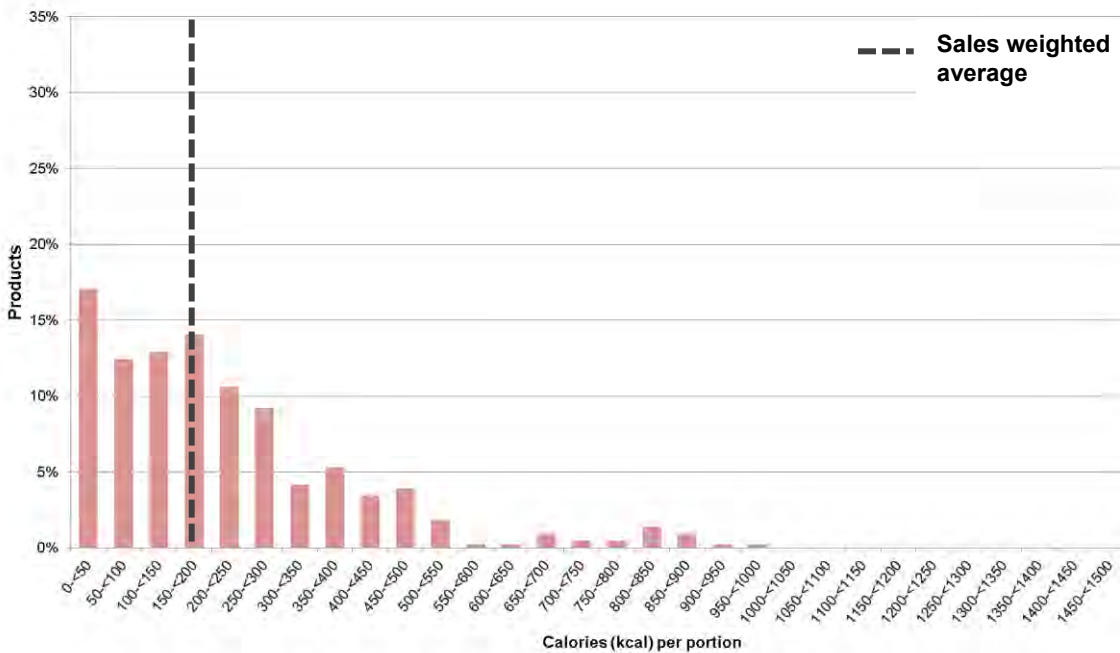
Baseline sales weighted average (SWA) total sugar content (g per 100ml)	7.2g
Range of total sugar content across products in category (min-max, g per 100ml)	0.0g – 19.0g
Range of total sugar content in products of top coffee shop/restaurant/pub chains (min-max, g per 100ml)	4.9g – 15.0g
SWA calories per portion	173 kcal

Graph 23.1: Soft drinks – distribution of sugar (g/100ml) content by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Graph 23.1: Soft drinks – distribution of calories (kcal) per portion by % products



Source: Nutrition data collected online or supplied by businesses; sales data supplied by NPD

Table 35: Summary of the data available and 2015 baseline metrics it has been possible to produce for retailers, manufacturers and the eating out of home sector

		Data available		Sales weighted averages		Simple averages		Limitations
		Volume sales	Sugar content of individual products	Sugar content (g/100g)	Calories (kcal) per portion	Sugar content (g/100g)	Calories (kcal) per portion	
Retailers	Retailer own brand products	2015 Kantar data with volume sales (kg/litres) at individual product level, identifiable by retailer/manufacturer	Real nutrition information from 2015 Kantar data	✓	✓	✓	✓	2014 Kantar data has been used as the baseline for the cakes and morning goods categories due to lack of portion weight information in the 2015 dataset. Real nutrition information is also limited for these foods, particularly in-store bakery products. The Kantar data has been supplemented with nutrition data provided by businesses where possible.
Manufacturers	Manufacturer branded products			✓	✓	✓	✓	

	Food outlet type	Volume sales	Product-level Nutrition Information	Sugar Content (g/100g)	Calories per Portion	Sugar Content (g/100g)	Calories per Portion	Limitations
Eating out of home	Coffee chains	<p>ing the 20%</p> <p>NPD CREST sales data, giving total servings sold in 2015 by food outlet type:</p> <ul style="list-style-type: none"> - Quick service restaurants - Retail on the go - Cafes/coffee shops - Pubs - Full service restaurants - Hotels - Leisure and travel (eg cinemas, on-board catering) - Workplace canteens - Vending machines <p>Sales data in servings available for all categories from NPD CREST database</p> <p>Captured across various NPD food outlet types (workplace, leisure and travel, pubs, hotels)</p>	Website/business nutrition information	<p>✓</p> <p>(Calculated at product category level, by applying median portion weights and sugar contents by food outlet type to NPD sales data)</p>	<p>✓</p> <p>(Calculated at product category level, by applying median calorie values by food outlet type to NPD sales data)</p>	<p>✓</p> <p>(Calculated at product category level, based on products in sample data)</p>	<p>✓</p> <p>(Calculated at product category level, based on products in sample data)</p>	<p>As there is a lack of data on the sector PHE are in discussions with the sector on how to improve data quality for future progress monitoring.</p> <p>SALES DATA Sales volumes from NPD CREST are given in number of servings, at product category and food outlet type level. No sales data are available for the sweet spreads.</p> <p>No detail is provided on individual businesses, and assumptions on typical portion sizes in grams, sugar and calorie content need applying to calculate sales weighted averages.</p> <p>NUTRITION DATA Nutrition information has been collected for 43 eating out of home businesses, covering approx. 1800 products. Sample sizes (broken down by product category/food outlet type) are small for calculating median sugar/calorie content and portion weights.</p>
	Family dining chains		Website nutrition information					
	Quick service restaurants		Website/business nutrition information					
	Pubs		Website/business nutrition information					
	Leisure and travel		Website nutrition information					
	Impulse		Website/business nutrition information					
	Contract caterers		Business nutrition information (limited)					

Appendix 2: Notes on the sugar reduction and calorie or portion size guidelines

This appendix provides further details regarding the data provided in Table 2 in the main report, ordered by column heading.

The figures presented in Table 2 are the finalised guidance. These figures may have changed from what was originally proposed in the category meetings held in November and December 2016. Changes have been made following feedback from industry and NGOs and other wider considerations including the overarching aim to reduce sugar levels and portion sizes. The changes made include, for example, the products included in the category and the way the sugar or calorie levels have been calculated, ie using conversion factors or similar.

Category description

The following provides a more detailed description of which products are included within each category. If a product is specified as having been excluded from a category, and an alternative category is not named, this product is excluded from the sugar reduction programme. It may be included in future reformulation work.

Inclusion of products in each category has been informed by categorisation within the National Diet and Nutrition Survey, Kantar Worldpanel database and feedback from industry and other stakeholders.

Breakfast cereals

Includes all breakfast cereals, eg ready to eat cereals, granola, muesli, porridge oats, instant porridge, and other hot oat cereals. Excludes cereals bars, breakfast biscuits, and toaster pastries, which are included in the biscuits category. Excludes cereal drinks, which will be assessed separately as part of the soft drinks industry levy.

Yogurts and fromage frais

Includes all sweetened dairy yogurt and fromage frais products, including non-dairy alternatives (such as soya, goat, sheep products) and all yogurts containing low/non-caloric sweeteners. Excludes natural yogurt and unsweetened yogurt and fromage frais. Excludes dairy desserts (such as mousse, custard, fruit fool, chocolate confectionery based desserts, crème caramel and panna cotta), which are included in the puddings category. Excludes frozen yogurt, which is included in the ice cream category. Excludes yogurt and dairy drinks. Any sugar-sweetened yogurt and dairy drinks that are excluded from the soft drinks industry levy will become part of the sugar reduction programme.

Biscuits

Includes all types of sweet biscuits including cereal bars and toaster pastries; breakfast biscuits; rice cakes; gluten free biscuits; in-store bakery products; two-finger Kit Kats (all other sizes are included in chocolate confectionery) and other similar individually wrapped, single serve biscuit bars. Excludes all other wrapped chocolate bars with/without biscuit, which are included in chocolate confectionery. Excludes savoury biscuits and crispbreads.

Cakes

Includes all types of cakes, ambient and chilled, including cake bars and slices, American muffins, flapjacks, Swiss rolls, and seasonal products such as Christmas cake. Excludes frozen gateaux, which are included in the puddings category.

Morning goods

Includes morning goods such as croissants, crumpets, English muffins, pancakes, buns, teacakes, scones, waffles, Danish pastries, fruit loaves, bagels. Excludes plain bread and rolls.

Puddings

Includes all types of ambient (including canned), chilled and frozen large and individual pies, tarts and flans (fruit and other), cheesecake, gateaux, dairy desserts, sponge puddings, rice pudding, crumbles, fruit fillings, powdered desserts, custards, jellies, meringues, seasonal products such as Christmas puddings. Includes puddings sold as a lone item and/or with accompaniments (eg custard, cream, ice cream).

Ice cream, lollies and sorbets

Includes all types of ice cream, dairy and non-dairy, choc ices, ice cream desserts eg Arctic roll, ice cream containing lollies, milk ice lollies, ice lollies; low fat/low calorie ice cream; sorbet; frozen yogurt. Includes ice cream served on its own, as part of a composite dish (eg an ice cream sundae) or as an accompaniment to a pudding.

Average conversion factors have been applied to ice cream products to convert volumes sales in litres to kilograms, and nutrition information provided per 100ml to per 100g.

Chocolate confectionery

Includes chocolate bars, filled bars, assortments, carob, diabetic and low calorie chocolate, seasonal products eg Easter eggs, chocolate produced for Christmas and Halloween. Other than the two-finger bars, which are included in the biscuits category, Kit Kats are included in this category.

Sweet confectionery

Includes boiled sweets, gums, pastilles, fudge, chews, mints, rock, liquorice, toffees, chewing gum, sweet and sweet & savoury popcorn, nougat and halva, seasonal products eg sweets produced for Christmas, Halloween etc. Excludes sugar free sweets and chewing gum.

Overall category of sweet spreads and sauces

Includes chocolate spread, peanut butter, ice cream and dessert sauces, dessert toppings and compotes, jam type spreads that are out of scope of the legislation. Excludes all syrups and honey including treacle etc; and all preserves (jams, marmalades, curds) and mincemeat, which are subject to the jams legislation,³⁰ for the sugar reduction part of the programme. *All* products, including those excluded from the sugar reduction part of the programme, are subject to the portion size guidelines when offered in a standalone portion. This applies mostly to the eating out of home sector.

- **Chocolate spread sub-category:** Includes chocolate hazelnut spreads, milk chocolate spreads, confectionery branded chocolate spreads
- **Peanut butter subcategory:** Includes peanut butter with added and no added sugar and flavoured peanut butter (including chocolate where peanuts are the main ingredient) as well as all other nut butters (eg almond, cashew)
- **Dessert toppings/sauces:** Includes dessert syrups with added sugar, coulis, compotes, cream based toppings, brandy sauce, whether served separately or as part of a composite dish
- **Fruit spreads:** Includes fruit-based spreads that do not fall under the EU jam definition and legislation

Sugar levels per 100g product

Baseline sales weighted average for total sugar

This provides the baseline sales weighted average figure for the sugar content of each category in grams of sugar per 100g for the year 2015. This baseline has been calculated using data for sugar levels in products for in home retailers and manufacturers and the eating out of home sector with an 80%/20% weighting respectively having been applied. This weighting has been taken from Years 5-6 NDNS analysis showing that, on average, 20% of meals over the survey study period were consumed out of home. The exact proportion varies depending on how strictly the definition of eating out is applied.

5% reduction guideline

This is a 5% reduction on the current baseline sales weighted average figure in grams of sugar per 100g. This sets out a clear goal for the sales weighted average level of sugar per 100g for each category to be achieved by August 2017. It also provides a figure against which progress in the first year of the programme can be monitored.

20% reduction guideline

This is a 20% reduction on the current baseline sales weighted average figure in grams of sugar per 100g. This sets out a clear goal for the sales weighted average level of sugar per 100g for each category to be achieved by 2020. It also provides a figure against which progress can be monitored.

Breakfast cereals: While an allowance of **10g** has been made for the amount of sugar in breakfast cereals coming from plain dried fruit (sugar coated or treated fruit is excluded) this has not been applied to the sugar levels in products or to the figures included in this table for the cereals category. This is for reasons of practicality.. In addition, businesses are not encouraged to reduce dried fruit in products to reduce the total sugar content, but are encouraged to move away from using fruit juice and sweetened dried fruit to sweeten their products.

Yogurts: A figure of **3.8g** per 100g has been applied to the yogurt and fromage frais category to allow for naturally occurring lactose in these products. This was agreed by major businesses in the yogurt sector and relevant trade associations. A specific calculation method has also been applied to the category to account for the lactose figure but which applies the 5% and 20% reductions to total sugars in these products. Further details are provided at Appendix 1.

Ice cream: Average conversion factors have been applied to ice cream products to convert volumes sales in litres to kilograms, and nutrition information provided per 100ml to per 100g (see Appendix 1 for further details).

All other food products: No allowances have been made in any other products that contain lactose (ie ice cream, custard, rice pudding) or dried fruit (eg cakes, buns). The majority of sugar in all other products will be added sugar. While it is acknowledged that, for example, some cakes contain dried fruit these will still contain added sugar; and those that do include dried fruit are only one part of the overall cake market.

Portion size guidelines (calories and grams)

Guidelines have been set for the amount of calories, or product weight in grams, that should be provided in products likely to be consumed by an individual at one time. PHE has used a pragmatic approach to setting these guidelines which have been determined by assessing the current sales weighted average and distribution of calories (or weight in grams) provided by relevant products; by pragmatically defining the size of a product likely to be consumed by an individual at one time; and using a sense check by considering typical amounts of relevant foods consumed by individuals within the NDNS. Unlike the sugar reduction guideline figures these calorie or portion size guidelines have not just been based on the current sales weighted average calorie level

provided by products likely to be consumed by an individual at one time for each category. Further details are provided in Appendix 1.

There are two types of calorie guideline – a sales weighted average and a maximum guideline. The sales weighted average guideline is designed to allow for flexibility within the category ie some products to be above, and some to be below, the figure set so that the overall sales weighted average calorie level for the category, and for individual businesses, should be in line with the guideline. The maximum guideline is set at an absolute maximum level for all products within the category that are likely to be consumed by an individual at one time. PHE encourages all businesses to move away from making larger single serve portions of high sugar foods.

Category specific portion guidelines

Breakfast cereals: the calorie guideline is set at a maximum of 400 kcals per single serve. This will be of most relevance to the eating out of home sector. The figure set (400 kcals) is considered a suitable “allowance” for breakfast (including any drinks and accompaniments) when taken in the context of a 2,000kcal each day for women and 2,500kcal for men across the whole day, with the remaining allowances being 600 kcals from both lunch and dinner separately (making a total of 1200 kcals from the two main meals of the day), with the remaining calories allowing for snacks and drinks.

Morning goods: The maximum calorie guideline for morning goods is set lower than for breakfast cereals at 325 kcals per portion. This is because breakfast cereals are generally a healthier and preferred option for regular consumption than morning goods. Breakfast cereals often provide a useful source of fibre and vitamins and minerals while morning goods are high in saturated fat and sugar without providing the other benefits provided by cereals.

Puddings: An additional portion guideline has been set for composite puddings provided in the eating out of home sector. This includes an additional allowance for puddings to be served with an accompaniment, such as apple crumble and custard or chocolate brownie and ice cream. This has been calculated based on the maximum for the puddings category plus an estimation of the contribution from a portion of additions of around 100kcal, ie vanilla ice cream 82kcal per 100ml portion; single cream 55kcal per 30ml portion; double cream 133kcal per 30ml portion; custard 124kcal per 125g portion.

Confectionery: The calorie guideline for sugar confectionery has been set at a lower level than for chocolate confectionery. This is based on the fact that the sales weighted average calorie level for sweet confectionery products likely to be consumed by an individual at one time was lower than for chocolate confectionery; the distribution of calorie levels is also further to the left (ie lower) for sweet confectionery. This will be

partly due to the fact that chocolate confectionery contains fat, while sweet confectionery generally does not, and is therefore generally higher in calories per 100g.

Biscuits, chocolate confectionery, ice cream: Much work has already been done by some biscuits, chocolate and ice cream manufacturers to reduce portion sizes to 250kcal in keeping with the voluntary code introduced by the Food and Drink Federation (this requested members sign up to a 250kcal calorie guideline on single serve confectionery by spring 2016). It is also likely that there is more scope within these categories for reducing portion size than for reformulation. PHE therefore wanted to set challenging but achievable calorie guidelines for these categories hence the figures set. However, PHE is aware there is a need to avoid a 'tipping point' in reducing portion size so that consumers are not nudged towards consuming two of the product as opposed to one.

Sweet spreads and sauces: Syrups, honey, treacle etc, and all preserves that are subject to the jams legislation, that are exempt from the sugar reduction guideline figure are subject to the portion size guideline, when offered in a standalone portion. This applies mostly to the eating out of home sector.

All categories: A guideline has not been set for products marketed specifically for consumption by children within each product category, although we would welcome smaller portion sizes for these as well as all other products.

Mechanism of most relevance to category

The final three columns of Table 2 illustrate the mechanisms that are of most relevance for sugar reduction for each category:

- reformulation ie reducing the sugar content
- a reduction in portion size and the calories coming from products likely to be consumed by an individual at one time
- shift in sales towards lower/no added sugar products

For each category, there is likely to be more scope for development in one or two of the mechanisms than all three. For example, in chocolate and sweet confectionery there may be limited scope for reformulation, but there are opportunities to reduce the calories coming from products likely to be consumed by an individual at one time. For breakfast cereals, however, there is likely to be more scope to reduce sugar consumption through reformulation and shifting focus away from high sugar products to lower sugar products, perhaps by delisting high sugar products (ie those above 22.5g per 100g).

Where to focus efforts

- industry is encouraged to focus its efforts on the biggest selling products where sugar levels and/or portion sizes are above guideline levels as these will have the greatest impact on the sales weighted average
- businesses are also encouraged to focus on the everyday, 'standard' products rather than producing alternative 'healthier' options as these tend to be of limited appeal and may have a limited effect on the sales weighted average

Appendix 3: Use of intense and non-caloric sweeteners

All sweeteners that are used in the EU undergo a rigorous safety assessment by the European Food Safety Authority (EFSA). As part of the evaluation process, EFSA sets an acceptable daily intake limit (ADI), which is the maximum amount considered safe to consume each day over the course of a lifetime. For intense sweeteners, conditions of use have been established which ensure that consumers do not exceed the ADI. Current EU regulations stipulate that sweeteners can only be added to certain foods and drinks, and only if they are 30% lower in sugar and energy compared to the standard product. This may not always be possible to achieve as it may be difficult to make a 30% reduction in the sugar content of a product at one time. It may also be difficult to make the simultaneous 30% reduction in energy, eg if the product contains saturated fat or protein.

In addition to EFSA's safety assessment, both Cancer Research UK and the US National Cancer Institute have concluded that based on scientific evidence, approved sweeteners are safe for humans to consume.

Some consideration was given to impact of the use of sweeteners on weight as part of PHE's evidence report '*Sugar reduction: The evidence for action*'. This concluded that replacing foods and drinks sweetened with sugar with those containing no or low calorie sweeteners could be useful in helping people to manage their weight as they reduce the calorie content of foods and drinks while maintaining a sweet taste. For this reason, PHE acknowledges that foods and drinks containing low/no-calorie sweeteners can be useful in helping to reduce calories.

It has been suggested that the use of intense sweeteners may have a stimulating effect on appetite and, therefore, may play a role in weight gain and obesity. However, research into sweeteners and appetite stimulation is inconsistent. Observational studies have reported that the consumption of diet drinks is associated with excess weight. However, the result may not have taken into account factors such as why people are consuming diet drinks – this may be a response to being overweight or obese. Also, there is little evidence from longer-term studies to show that sweeteners lead to increased energy intake and contribute to the risk of obesity. Both PHE's report on sugar reduction, and the evidence in the SACN report '*Carbohydrates and Health*', showed swapping to low or no sugar drinks goes some way to managing calorie intake and weight. However, maintaining a healthy weight takes more than just swapping one product for another. Calories consumed should match calories used, so looking at the whole diet is very important.

SACN based its advice to minimise sugar sweetened beverages on evidence from long-term trials in children and adolescents, which showed that those who consumed drinks containing sweeteners gained less weight than those who drank sugar sweetened ones. This finding is particularly pertinent as young people in the UK consume three times the recommended amount of sugar, most of which comes from soft drinks.

PHE endorses EFSA's scientific opinion on low calorie/non-caloric sweeteners. Sweeteners are a safe and acceptable alternative to using sugar and it is up to businesses if and how they wish to use them. It is known that some of the food and drink industry uses them as a means to lower the sugar content of their products while others do not, either due to legislative restrictions or issues relating to consumer acceptability. PHE can see advantages in businesses not adding sweeteners to their products and gradually reducing the overall sweetness of their products because this allows for people's palates to gradually adjust to less sugary foods.

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