Briefing paper on Discretionary foods

Food Standards Scotland

Prepared by
Food Standards Scotland Nutrition Science and Policy Branch

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CONTENTS

DISCRETIONARY FOODS

1. Introduction and purpose

1.1 In 2015 Food Standards Scotland (FSS) introduced the term discretionary foods* based on evidence identifying the main food and drink contributors to intakes of calories, fats and sugars in the Scottish diet.[1] The foods identified were confectionery, sweet biscuits, savoury snacks, cakes, pastries, puddings and sugar containing soft drinks.† These foods have a significant impact on the diet, accounting for, on average, about one fifth of total calories, total fat and saturated fats and over half of daily free sugars consumption. FSS concluded that a key step towards meeting our dietary goals in Scotland would be to reduce our intakes of these foods, which convey little or no nutritional benefit, by a round a half.[1] These foods are optional in the diet and are therefore considered discretionary.

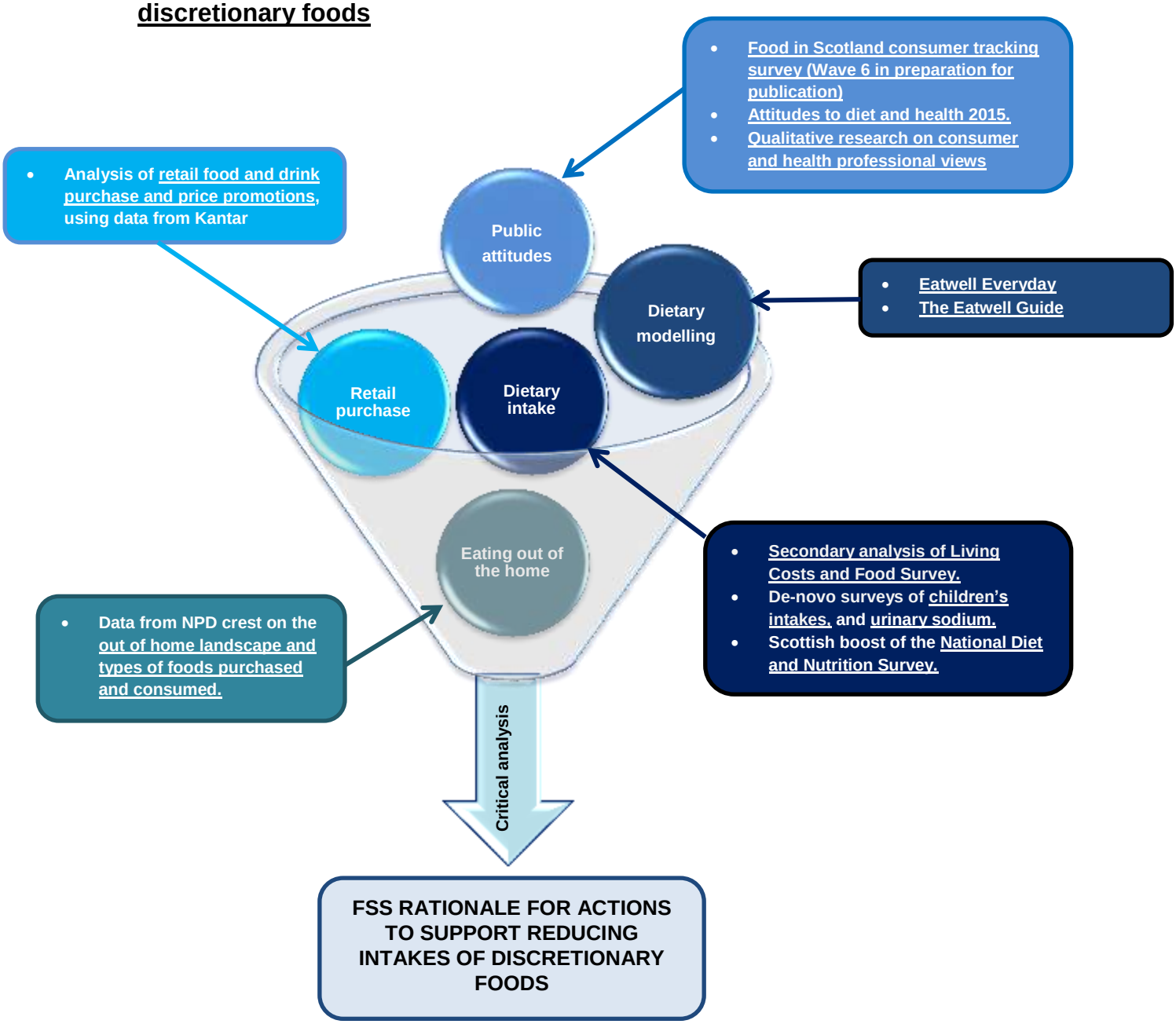
1.2 The aim of this briefing paper is to provide more up to date and detailed information to support the FSS position on discretionary foods and provide an evidence base for actions to reduce current intakes of these foods.

1.3 The diet in Scotland has not changed much since 2001[2] and reducing population intakes of discretionary foods will be very challenging. As there is no single policy solution, a range of measures to transform the food environment, shift consumer behaviour and improve the Scottish diet will be required. FSS has proposed a package of measures for improving the diet in Scotland.[3]

1.4 An in depth understanding of the evidence available regarding the Scottish diet has informed the FSS position on discretionary foods. This includes dietary modelling[4,5] which shows that there is very limited capacity in a healthy diet for discretionary foods and the triangulation of data on dietary intakes[2], retail purchases[6] and public attitudes[7,8,9] to these foods. The schematic below provides a summary of the types of evidence used.

* A collective term used in this paper for discretionary foods and drinks.
† Also referred to as soft drinks with added sugar

Figure 1: Overview of evidence used to develop the FSS rationale for reducing discretionary foods



2. Food Standards Scotland (FSS) definition of discretionary foods and drinks

2.1 In the UK, foods and drinks high fat, sugar or salt (HFSS) have been defined by the UK Nutrient Profiling Model (NPM).[10] Discretionary foods, as defined by FSS, are a subset of HFSS foods, comprising confectionery, sweet biscuits, crisps, savoury snacks, cakes, sweet pastries, puddings and sugar containing soft drinks. Further details of the discretionary food categories is provided in Annexe 1 and the NPM in Annexe 2.

2.2 Nearly all of us consume too many discretionary foods[2,11,12] often as snacks and treats[13] in addition to or as part of meals, and they are not required for our health.[4] In Scotland these foods negatively impact on our diet and account for, on average, about one fifth of total calories, total fat and saturated fats and over half of daily free sugars consumption.[2]

2.3 The Eatwell Guide depicts a healthy balanced diet[4] which allows requirements for essential nutrients to be met and shows that there is little additional capacity for consumption of discretionary foods.[4] These foods provide few essential nutrients (more information is provided in Annexe 5). Dietary modelling shows that when too many discretionary foods are included, they displace more nutrient rich foods in the diet, which means that our essential nutrient requirements cannot be met,[5] they can also add surplus calories, fats, sugars and/or on top of an otherwise healthy diet increasing the risk of weight gain and health harms (see Section 5).

2.4 Ice cream and dairy desserts categories could also be considered for inclusion within the definition of discretionary foods, though it is recognised that some products within these categories may contribute some essential nutrients such as calcium and protein. More information is provided in Annexe 5.

3. Non-discretionary, high fat, sugar or salt foods

3.1 The rationale for separating the discretionary foods categories from other HFSS food categories is based on the following:

- Non-discretionary HFSS foods are generally consumed as a basic part of a meal rather than as a snack or treat. These include for example, some processed meat, potato and dairy products which contribute considerably to calories, fats, sugars or salt to the diet, but can also confer some beneficial nutrients, such as protein, iron, calcium and dietary fibre.[11] A higher proportion of products within these categories are also likely to pass the current UK NPM compared with discretionary foods.[10] (For more information see Annexe 2).

- Other non-discretionary HFSS foods may be categorised as meal ingredients or accompaniments. These include for example, spreading fats, cooking oil, table sugar, table salt, pickles, table sauces and condiments.

4. Discretionary foods in the Scottish diet

4.1 Contribution of discretionary foods and drinks to the Scottish diet

4.2 FSS routinely collects information on food and nutrient intakes in Scotland, including average population intakes of discretionary foods.[2] The most up to date evidence on the role of discretionary foods was summarised in the FSS Situation report; the Scottish Diet it needs to change, published in March 2018.[14] The most recent summary of the contribution discretionary foods make to calories, fats and sugars presented in Table 1. More details on the relative contributions of all the foods and beverages contributing to more than 1% of intake can be found in Annex 3.

4.2.1 Table 1 below shows the significant impact that discretionary foods have on the diet, accounting for, on average, about one fifth of total calories, total fat and saturated fats and for over half of daily free‡ sugars consumption.[2] In fact, on average, discretionary foods alone provide around 38g which is more than the recommended 30g maximum of free sugars an adult should have per day.[15]

4.2.2 For a more detailed breakdown see Tables 1-4 in Annexe 3, which shows the contribution and ranking of these foods and drinks to total calories, total fat, saturated fats and free sugars in the Scottish diet. The tables also provide the contribution of all other foods and drinks contributing more than 1% to these nutrients.[2]

4.2.3 FSS data shows that intakes of discretionary foods have remained consistently high since 2001, with the exception of sugary drinks which have reduced.[2] There are also no significant differences between those living in the least and most deprived areas in consumption of discretionary foods with the exception of intakes of sugary drinks which are significantly higher for those living in the most deprived areas.[2]

4.2.4 Table 1 Contribution of discretionary foods and drinks to calories, total fats, saturated fats and free sugars (non-milk extrinsic sugars, NMES) 2013-2015 (intake (percentage) per person per day)

	Weight (g)	Calories kcal (%)	Total fat g (%)	Saturated Fats g (%)	Free sugars (NMES) g (%)
Sweet Biscuits	21.6	103 (5.3)	4.9 (5.9)	2.5 (7.7)	5.7 (8.0)
Total Confectionery	21.2	92.2 (4.7)	3.7 (4.5)	2.0 (6.3)	12.8 (17.9)
Crisps and Savoury Snacks	13.4	67.1 (3.4)	3.8 (4.5)	0.5 (1.6)	0.02 (0.02)
Cakes, Pastries and Puddings	16.5	59.7 (3.1)	2.8 (3.3)	1.2 (3.7)	4.4 (6.2)
Sugar Containing Soft Drinks	156	57.0 (2.9)	Nil	Nil	14.9 (20.8)
Total contribution		**379**	**15.2g**	**6.2g**	**37.8g**
Total % contribution		**19.4%**	**18.2%**	**19.3%**	**52.9%**

‡ Free sugars are largely added to foods, the definition is very similar to that of non-milk extrinsic sugars (NMES) on which the analysis in Table 1 is based.[2]

4.2.5 FSS data on retail purchase into the home suggests a similar hierarchy of discretionary foods purchased when compared to data on consumption, which adds strength to the evidence. Discretionary foods are significant contributors to retail purchase of calories and total fat (23%), saturated fats (24%), total sugars (34%) and salt (11%).[6] Annexe 4 provides further information on the contribution of foods to retail purchase of calories and nutrients. It is important to note that the food categories used to define discretionary foods differ slightly depending on the data source. However the categories are considered sufficiently close for the purposes of this paper.

4.3 Frequency of consumption of discretionary foods in the diet

4.3.1 Not only are discretionary foods consumed in large quantities they are also frequently consumed. Snacking is very popular in the UK with one third of us snacking twice a day or more. Although fruit and other healthier foods are also sometimes eaten as snacks, discretionary foods such as crisps, chocolate, sweet biscuits are frequently consumed.[13]

4.3.2 Based on the Scottish Health Survey (SHeS),[12] in 2016, 32% of adults ate cakes at least twice a week; 27% ate ice cream at least once a week; 28% of adults consumed sweets or chocolates at least once a day; 28% consumed biscuits at least once a day; and 17% consumed crisps or other savoury snacks at least once a day.

4.3.3 Children consume discretionary foods even more frequently when compared with adults. Based on SHeS data from 2015/16 combined, on average 51% of children consumed sweets or chocolates, 33% consumed crisps or other savoury snacks, 32% consumed biscuits and 35% drank non-diet soft drinks at least once a day on average. Cakes were consumed by 33% of children at least twice a week and 48% ate ice cream at least once a week.[12] National Diet and Nutrition Survey data has shown that, on average, boys aged 11-18 years old in Scotland had the highest consumption of non-diet soft drinks in the UK, with intakes of 362g per day which is equivalent to more than one 330ml can a day.[11]

4.3.4 When eating out of the home choices are skewed towards less healthy options for both adults and children in Scotland. Discretionary foods including sugary drinks, cakes, biscuits and pastries are among the most commonly consumed.[16]

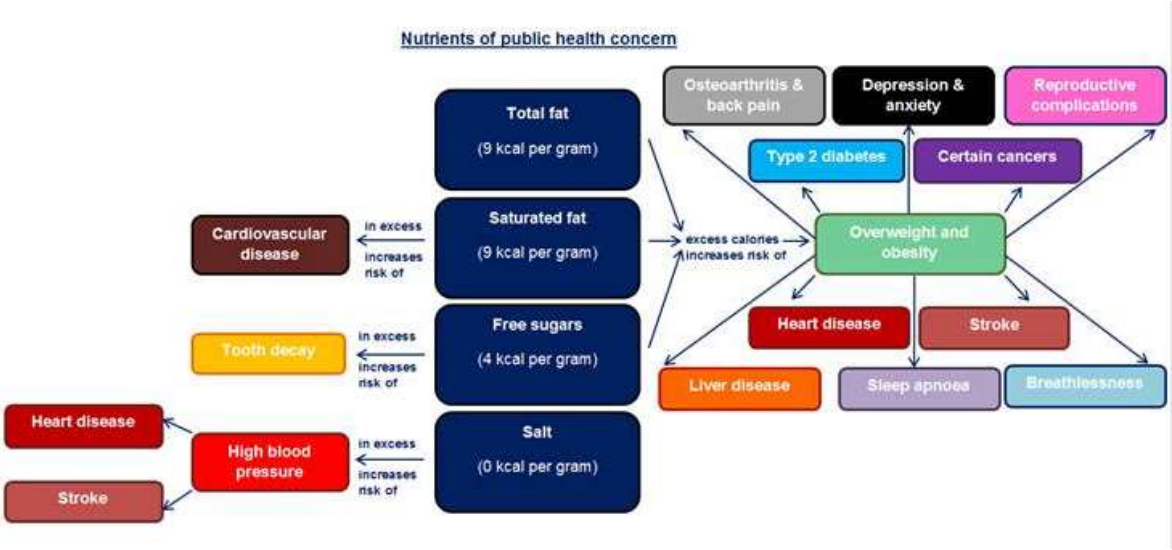
4.4 Recognition that we consume too many discretionary foods

4.4.1 Data from wave 6 of the FSS Food in Scotland Consumer Tracking Survey from June 2018[17] shows that consumers consistently recognise that there is a problem with discretionary foods in our diets, with nearly half of adults aged 16 and over in Scotland (46%) agreeing that ‘I know I eat too many 'treats' like cakes, biscuits, chocolates or sweets every day’. Other FSS research found that over 40% of both adults and parents said they had attempted to reduce their own/their child’s intake of discretionary foods over the past year.[8]

5. Relationship between calories, nutrients of public health concern and health harms

5.1 Discretionary foods are high in total fat, saturated fats, free sugars (also referred to as added sugars) or salt (sodium). These nutrients are of public health concern because our consumption exceeds our requirements. Saturated fats, free sugars and salt can directly increase the risk of health harms such as cardiovascular disease, high blood pressure and tooth decay.[18,19,20] Total fat, saturated fats and free sugars also contribute, indirectly through excess calories. A prolonged excess energy intake is fundamental to weight gain and the development of obesity and therefore to increasing the risk of health harm including common conditions such as type 2 diabetes, certain cancers and cardiovascular disease.[21] (See schematic below).

Figure 2: Health harms relating to the nutrients of public health concern



6. Discretionary foods and displacement of healthier foods

6.1 Overconsumption of discretionary foods adversely skews the balance of the Scottish diet so that the diet is higher in nutrients of public health concern and lower in foods and nutrients which have positive health benefits.

6.2 If we were to achieve a 50% reduction in discretionary foods this could equate to a reduction of around of 190 kcals per person, per day. Assuming a straightforward method of calculation, without replacement with other foods, this would move population intakes towards the dietary goal for total fat (≤35% of food energy) and saturated fats (≤11% of food energy) and free sugars (≤5% of total energy). Total fat intakes would reduce from 39.3% to 36.1% of food energy (-8.1%), saturated fats intakes would reduce from 15.3% to 14.0% of food energy (-8.5%) and free sugars intakes would reduce from 14.3% to 11.0% of food energy (-23.1%). See Table 1 in Section 4 and Table 5 in Annexe 3 which shows the impact of 50%, 25%, 10% and 5% reductions in discretionary foods.

6.3 Achievement a 50% reduction in discretionary foods without replacement would also slightly reduce average intakes of dietary fibre and some vitamins and minerals. However, for any reduction in discretionary foods, the percentage reduction in dietary fibre and some vitamins and minerals would be less than the percentage reduction in total fat, saturated fats and free sugars (see Table 5 in Annexe 3 and Table 3 in Annexe 5). The benefit of the reducing calories, fats and sugars, outweighs minor reductions in fibre, vitamins and minerals, especially if a proportion of discretionary foods were replaced by foods of higher nutritional quality.

6.4 On average, adults and children in Scotland currently have diets insufficient in nutrient-rich fruit and vegetables, oil-rich fish and dietary fibre[2], the lack of which is linked to an increased risk of some cancers and cardiovascular disease.[22] Those living in the most deprived areas tend to have the lowest intakes of fruit and vegetables, oil-rich fish and dietary fibre.[2] Further progress towards the dietary goals would be made by consuming more nutrient rich foods such as fruit and vegetables, whole-grain cereals, beans and pulses.[11,22]

6.5 Whilst it is unlikely that people will simply replace discretionary foods with fruits and vegetables for example, substitution with any more nutrient rich, and less energy dense food would be beneficial. If some of the calories from a 50% reduction discretionary foods were replaced, this would result in less than a 190 kcals reduction per person per day. Nevertheless this should reduce calories and move the population towards the Scottish dietary goals.

7. Drivers for overconsumption of discretionary foods

7.1 The appeal of discretionary foods

7.1.1 Both physiological and psychological prompts can lead to overconsumption of calories.[23] FSS qualitative research[6] found that eating habits are heavily influenced by taste, price and convenience, and foods high in fat and/or sugar are viewed by consumers as being tasty, relatively cheap, readily available, and ready to be eaten.[9]

People tend to have a strong innate preference for foods high in fat, sugar or salt.[24] As part of a qualitative study with focus groups including participants from a range demographic groups across Scotland FSS research found that discretionary foods were overwhelmingly seen as 'appetising', 'delicious', 'appealing', 'attractive', 'tempting' and 'tasty'. Participants also believed that we 'are programmed to like sugar and fat and considered such foods to be addictive.'[9] They also reported feeling emotionally reliant on these foods and considered them to promote mental wellbeing. They reported using them for comfort, or to alleviate stress or boredom, so would consume them even when they were not hungry.[9] Consumption of foods high in fat and/or sugar is also driven by the fact that these foods are viewed as rewards or treats, which consumers feel they deserve and are entitled to. Data from wave 6 of the FSS Consumer Tracking Survey found that nearly half (46%) of those with children in their household agreed that 'It's OK to reward children with chocolates, sweets and biscuits'.[17]

7.1.2 As part of the qualitative study with focus groups, pictures of discretionary foods were provided and participants asked to decide how many of these types of foods they thought could be consumed as part of a healthy balanced diet. Most people were surprised at how few could be consumed. Some people suggested that they may reduce their consumption "a bit". For example, if they were currently consuming 14 "treats" a week, they may try to reduce their intake to 10 or 12 per week. [9]

7.2 Discretionary foods and satiety

7.2.1 Discretionary foods have a high energy density (i.e. high calorie content per 100g). We tend to have a poor physiological ability to recognise high energy dense foods.[25] Consumption of these foods produces a relatively low feeling of satiety. This makes it easy to over consume calories which, in turn, can increase the risk of overweight and obesity and associated health harms.[25] The necessity to reduce the energy density of the diet is reflected in the Scottish dietary goal to lower the average energy density of the overall diet to 125 kcal/100g.[22] This could be achieved by inclusion into the Scottish diet of additional lower energy dense foods such as fruits and vegetables, starchy carbohydrates (e.g. bread, pasta, rice and potatoes), beans and pulses. Annexe 6 provides more information on energy density.

7.3 Environmental cues

7.3.1 We are heavily influenced by habits and food cues in the surrounding environment and we all have a limited ability to resist temptation.[26] Discretionary foods are often purchased on impulse, with little conscious awareness or deliberation by the consumer.[27] Industry use a variety of marketing strategies, including price-setting for different pack sizes, marketing, price promotions and product placement, to encourage purchase and consumption of discretionary foods.[28] For example,

because of their highly impulse-driven nature, 39% of adults buy sweets after seeing them in-store.[29]

7.3.2 Large portion sizes of discretionary foods

7.3.2.1 Discretionary foods such as chocolate, crisps, sweet biscuits are sold in an array of portion and pack sizes, with many at the top end of the range being unacceptably large in the context of a healthy diet.[30] There has been a divergence between pack size and serving/portion size with consumer disconnect between the two.[28] Super-sized and expanded multi-packs have developed in order to present value for money to consumers.[28] The availability of over-sized portions is likely to encourage over-consumption as people consistently consume more when offered larger-sized portions and packages than when offered smaller sized versions.[31]

7.3.2.2 Price setting for different portion or pack sizes of discretionary foods may also be incentivising the purchase of larger volume products as the larger pack size often appears to represent better value for money [28,32]

7.3.2.3 Large portion sizes are of particular concern when eating out of home, with calories in many biscuits, ice creams, sorbets and puddings, containing approximately double the number of calories when compared to equivalent products purchased from retailers into the home.[33] Recent studies have revealed the very high levels of sugar and calories due to large portions sizes of cakes sold in coffee shops and railway station outlets in the UK.[34]

7.3.2.4 Reformulation of discretionary products to lower the calorie content and improve the nutritional profile would help, but there are potential technical challenges in reducing calories and energy density in some discretionary foods.[35] More action to enable individuals to choose smaller portion sizes in addition to consuming discretionary foods less frequently, is therefore required to substantially reduce intakes of discretionary foods.[3]

7.4 Promotion and marketing of discretionary foods

7.4.1 FSS data shows that discretionary foods tend to be purchased more frequently on price promotion (around 45% are purchased on promotion) compared to staple, healthier food categories (around 30% are purchased on promotion).[6] For confectionery, purchase on promotion can be as high as 74% within some retailers.[6] Table 3 in Annexe 4 based on additional analysis by FSS, shows that discretionary food purchased on price promotion contribute over 10% of calories, fat and saturated fats and over 16% of total sugars purchased into the home.

7.4.2 Price promotions also occur out of home. Based on a sample of 240 mystery shopping visits to quick service restaurants in Scotland, as much as 20% of price promotions within a sample of quick service restaurants in Scotland was found to be for confectionery or other sweet products such as ice-cream and sweet pastries, and a further 11% for soft drinks.[36] Further analysis of data for 2015 previously published by FSS,[16] found that among the foods and drinks most commonly purchased on promotion out of home were puddings/desserts (30%), crisps/popcorn/salty snacks (32%) and regular cola (36%). Cakes, pastries and confectionery were the most likely items (48%) to be displayed at the checkout.[36]

7.4.3 There is also evidence for very large seasonal fluctuation in the retail purchase of discretionary foods. For example, compared with the rest of the year,

purchase of confectionery increased by 54% in the 12 weeks leading up to Christmas 2014, while the average food and drink increase was 10%.[37] Some of this increase is likely to be driven, not only by price promotions but by other types of marketing strategies, such as product placement and other advertising and promotional activities.[37]

7.4.4 Product placement is designed to increase impulsive food and drink purchase.[38] End of aisle display has been shown to have a large impact on sales of drinks in the UK, increasing the sales volumes of carbonated drinks by 73%.[39] One audit of supermarkets' product positioning in eight developed countries found that the UK had the highest aisle length dedicated to snack foods including crisps, chocolate and confectionery, with snack food at over 70% of checkouts.[40] In a UK study of non-food stores, almost one-sixth displayed checkout food, the majority of which was 'less healthy' and displayed at child height.[41]

7.4.5 A study by Stirling University in 2015 found that children across Scotland were exposed to large amounts of marketing for discretionary foods. More than 50% of all food and drink marketing seen by 11-18 year olds was for sugary drinks, confectionery and savoury snacks. In addition, more than 80% of the products that young people purchased in response to till displays and prompts were confectionery or sugary drinks.[42]

7.5 Price promotion and inequalities

7.5.1 There is little difference in consumption of cakes, sweet biscuits and pastries; ice cream and dairy desserts; or confectionery between those living in the least and most deprived areas.[2] We all purchase foods and drinks on price promotion and there is no evidence of a difference in the proportion of foods and drinks purchased on price promotion by socioeconomic status in Scotland, however, analysis by income does suggest that those with the lowest incomes spend a lower proportion of their food and drink budget on promotion, compared to those in the highest income groups (33% versus 39%), although the differences were small.[6]

7.5.2 It is also important to note that, while consumers can save money on individual items, these are not always the 'best deal' as products on price promotion are not always the cheapest.[6] For example, careful shoppers may notice that own brand or 'value' biscuits with no promotion are often cheaper than the same sized packet of branded biscuits on promotion.[6]

8. Consumer views on actions to reduce intakes of discretionary foods

8.1 The FSS wave 4 consumer tracking survey found that 43% of consumers think that standard portion sizes of items such as chocolate bars, savoury snacks, crisps, sweets, cakes and muffins should be reduced.[7] Similarly, the Scottish Social Attitudes survey found that 57% of people support action to reduce the portion sizes of unhealthy drinks or snacks.[43] Wave 6 of the FSS Food in Scotland Consumer Tracking Survey from June 2018 found that 52% of people agreed that large portion sizes of drinks and snacks such as muffins, cakes, pastries and popcorn should be reduced.[17]

8.2 The FSS Survey from June 2018[17] showed that support for restricting the marketing and promotion of some unhealthy food/drink inside the premises they are sold ranged from between one-third and two-thirds of consumers, depending on the products in question. Support was highest for sugary drinks (69%), confectionery (55%), cakes and sweet pastries (52%) savoury snacks (45%), biscuits (38%) and puddings (34%). Fewer were in favour of restricting savoury pies and pastries (33%), ice-cream (30%), fruit juice (21%) and cereal bars (19%). These results were relatively consistent across age and socioeconomic status.[17]

In relation to the placement of high fat, salt and sugar foods next to checkouts, the tracking survey showed that 61% of consumers agreed that shops should not be allowed to place these foods next to checkouts, compared to 14% of the sample who disagreed.[17] Similarly, the Scottish Social Attitudes[43] survey found that 66% of people were in favour of action to address this compared to 18% of the sample against action being taken.

9. Conclusion

9.1 Discretionary foods are not required in the diet and their overconsumption needs to be addressed to help improve dietary health in Scotland. They account for, on average, about one fifth of total calories, total fat and saturated fats and for over half of daily free sugars consumption.[2] Over-consumption of fats and sugars also contributes to weight gain and the development of obesity, which if sustained leads to an increased risk of health harms including diseases such type 2 diabetes, some cancers and cardiovascular disease.

9.1 FSS advise that a key step to improving Scotland's diet would be to reduce the amount of discretionary foods we eat by at least half. To achieve this very challenging target, a wide range of measures will be required to transform the food environment and shift consumer behaviour.

9.2 A 50% reduction in discretionary foods would result in significant progress towards the Scottish dietary goals with minimal impact on intakes of nutrients which have positive health benefits. Further progress towards the goals would be made by increasing consumption of less energy dense and more nutrient rich foods such as fruit and vegetables, whole-grain cereals, beans and pulses.[4,22]

9.3 With two-thirds of the Scottish population overweight or obese, any reductions in discretionary foods would help to reduce excess calorie intakes and tackle overweight and obesity.

9.4 Consumers find the purchase and consumption of discretionary foods difficult to resist.[9] Children consume discretionary foods and drinks even more frequently when compared with adults.[12] FSS tracker surveys show that many people in Scotland would support policy action to address environmental triggers which encourage over-consumption of discretionary foods, such as large portion sizes, promotional offers and placement at checkouts.[7,17]

9.5 FSS will continue to monitor dietary intakes and consumer purchasing in Scotland in order to track any changes resulting from policy actions to reduce discretionary foods.

10. Annexe 1: Sub categories of discretionary foods

Breakdown of Food Groupings for discretionary foods, taken from the Living Costs and Food Survey report.[2]

Food Grouping Description	Description
Cakes, Pastries and Puddings	Danish pastries, Pecan Danish, fruit pies, fruit tarts, jam tarts, custard tart, treacle tart, flans, bakewells, chorley cakes, tortes, egg custards, raisin & currant puffs, fruit pastries, sponge cakes, gateau, Stollen, parkin, swiss rolls, chocolate cakes, cream cakes, éclairs, chocolate croissant, pain au chocolat, chocolate brioche, meringues, pavlova, pop tarts, doughnuts, American muffin 'cakes', blueberry muffins, chocolate muffins, frozen cheesecakes, frozen chocolate-filled pancakes, frozen eclairs, frozen sponges and gateaux, (including those with ice-cream), frozen Danish, frozen custard slice, frozen apple pie, frozen fruit pies, frozen pavlova, frozen profiteroles. Instant/dessert whips, trifle mixes, cheesecake mixes, crumble mix, fruit puddings, summer fruit pudding, sponge puddings, chocolate sponge pudding, treacle sponge pudding, syrup puddings, fruit fritters, Christmas pudding, bread pudding, sticky toffee pudding
Crisps and Savoury Snacks	Crisps and potato snacks, cereal snacks, popcorn, poppadums, prawn crackers, corn snacks (based on maize), wheat based savoury snacks
Sugar Containing Soft Drinks	Soft drinks, concentrated, not low calorie, soft drinks, not concentrated, not low calorie, soft drink (incl carbonates & still) - not low calorie (including drinks where calorie content unspecified), soft drink where pure juice or juice drink not specified, mixer recorded with spirits, alcopops.
Sweet Biscuits	Sweet biscuits (not chocolate) and cereal bars, chocolate biscuits, fully-coated chocolate biscuits or wafers, sweet biscuits including half-coated chocolate biscuits, cereal bars and cereal based cakes.
Confectionery	Solid chocolate bars, filled chocolate-coated bars, sweets, mints, boiled sweets, fudges, toffees, caramels, jellies and unspecified 'sweets,' uncoated toffee or fudge, chocolate éclairs, caramels, pick 'n' mix, nougat, liquorice and other sweets
Ice Cream and Dairy Desserts	Ice cream tub or block, ice cream cornets, choc-ices, lollies with ice cream, ice lollies, sorbets, chilled dairy desserts including mousse, pannacotta, cheesecake, trifle, syllabub, fruit fool, tiramisu, twin pots, frozen yoghurt, takeaway milkshakes

11. Annexe 2: The UK Nutrient Profiling Model

11.1 HFSS are food and soft drink products that are high in fat, salt or sugar, which have been defined using the UK Department of Health nutrient profiling model (NPM)[10]. This model takes account of energy and the nutrients of public health concern (saturated fats, total sugars and sodium) together with positive health attributes from fruit, vegetables and nut content, fibre and protein to provide a single nutrient profiling score.

11.2 The nutrient profiling model (NPM) was first developed by the Food Standards Agency (FSA) in 2004-2005 as a tool to help Ofcom[44] differentiate foods and improve the balance of television advertising to children. Ofcom introduced controls which restricted the advertising of HFSS foods in order to encourage the promotion of healthier alternatives.

11.3 The UK NPM covers foods and non-alcoholic drinks, utilising a scoring system for 7 nutrient/food components based on per 100g as sold. Points are allocated based on 4 'negative' nutrients/food components (i.e. energy; total sugars; saturated fats and sodium) and 3 'beneficial' nutrients/food components (ie fruit, vegetables and nuts; fibre and protein). Protein is used as a marker of iron, calcium and n-3 fatty acids.

11.4 The UK NPM was adopted by CAP to identify HFSS foods and drinks so that advertising for such products could be subject to restrictions in children's non-broadcast media (including print, cinema, online and in social media). These restrictions came into force in 2017. The effective usability of the model continues to be dependent on the use of accurate and reliable compositional data and nutrition labelling data.

11.5 When tested, few discretionary foods pass the current NPM (0% chocolate confectionery, 4% of sugar confectionery, 4% of crisps/savoury snacks/popcorn, 1% of sweet biscuits, 37% of desserts). In contrast, more products pass the NPM in categories such as meat (49%), potato products (96%), ready meals (82%), yogurt and fromage frais (82%).

11.6 There are hundreds of discretionary foods available on the market, with new and reformulated products continually being developed. Although the vast majority of foods within the discretionary categories would not pass the pass the current NPM, there may be a few outliers which will.

11.7 Because the UK NPM is over 10 years old, the NPM is currently being reviewed to bring it into line with the most recent UK and Scottish dietary recommendations[22,45] which will result in fewer discretionary products passing the model.

12. Annexe 3: Contribution of foods and drinks to intake of nutrients

12.1 The tables below show the mean contribution of foods providing more than 1% of total kilocalories, total fat, saturated fats and free sugars (non-milk extrinsic sugars) (NMES) in the Scottish diet. Discretionary products are highlighted in pink. The food categories are ordered by their overall contribution to kilocalories, total fat, saturated fats and free sugars (NMES) in the Scottish diet. These data are taken from a report published by Food Standards Scotland which estimated population food and nutrient intakes based on food purchase data in Scotland.[2]

12.2 Data on the contribution of discretionary foods to salt intakes are not available, therefore data on salt (sodium) retail purchase from discretionary foods has been used as a proxy measure (see Annexe 4, Table 1).

Table 1 Annexe 3: Mean contribution of foods providing more than 1% of total calories (2013-2015)

Food Grouping	% Contribution to Total kcal			kcal
	All	Household	Eaten Out	All
Total Processed Red Meat	7.5	6.8	0.7	146
Bread and Rolls	6.7	6.6	0.1	130
Unclassified Foods	5.9	1.9	3.9	115
Sweet Biscuits	5.3	5.2	0.1	103
Total Milk	5.3	5.2	0.1	104
Total Spreading Fats	4.8	4.8	0.0	93.9
Total Fruit and Vegetables	4.7	4.6	0.1	91.9
Total Confectionery	4.7	4.5	0.2	92.2
Total Breakfast Cereal	3.8	3.8	0.0	73.8
Alcoholic Drinks	3.6	2.8	0.8	71.1
Crisps and Savoury Snacks	3.4	3.2	0.2	67.1
Pasta, Rice and Noodles	3.2	3.0	0.2	61.8
Cakes, Pastries and Puddings	3.1	2.6	0.4	59.7
Sugar Containing Soft Drinks	2.9	2.4	0.6	57.0
Cooking Oil	2.6	2.6	0.0	51.6
Processed Potatoes	2.6	1.9	0.7	50.6
Total Cheese	2.6	2.6	0.0	51.4
Unprocessed Red Meat	2.2	2.1	0.1	43.7
Ice Cream and Dairy Desserts	1.9	1.8	0.1	36.8
Poultry	1.9	1.7	0.2	36.6
Savoury Sauces and Dressings	1.8	1.8	0.1	35.9
Sugar	1.8	1.8	0.0	35.7
Other Baked Goods	1.7	1.6	0.1	33.0
Ready Meals	1.7	1.7	0.0	32.9
Potatoes	1.5	1.3	0.1	28.7
Pizza	1.4	1.3	0.2	27.8
Sandwiches	1.3	0.2	1.0	24.5
Yoghurt and Fromage Frais	1.1	1.1	0.0	21.3
Other Food Groupings	8.6	7.1	1.6	174

unclassified foods = mainly eaten out such as 'meal', 'school meal' or 'meal at work'

Table 2 Annexe 3: Mean contribution of foods providing more than 1% of fat (2013-2015)

Food Grouping	% Contribution to Total Fat			Fat g
	All	Household	Eaten Out	All
Total Spreading Fats	12.4	12.3	0.1	10.4
Total Processed Red Meat	12.0	11.0	1.0	10.1
Unclassified Foods	6.9	1.9	4.9	5.8
Cooking Oil	6.8	6.8	0.0	5.7
Sweet Biscuits	5.9	5.8	0.1	4.9
Total Milk	5.2	5.1	0.1	4.4
Total Cheese	5.1	5.0	0.0	4.2
Crisps and Savoury Snacks	4.5	4.1	0.3	3.8
Total Confectionery	4.5	4.3	0.2	3.7
Unprocessed Red Meat	3.4	3.3	0.1	2.8
Cakes, Pastries and Puddings	3.3	2.8	0.5	2.8
Savoury Sauces and Dressings	3.0	2.8	0.2	2.5
Poultry	2.4	2.2	0.2	2.0
Processed Potatoes	2.3	1.6	0.7	1.9
Ice Cream and Dairy Desserts	2.1	2.0	0.2	1.8
Ready Meals	2.0	2.0	0.0	1.6
Nuts	1.9	1.9	0.0	1.6
Cream	1.6	1.5	0.0	1.3
Sandwiches	1.5	0.3	1.2	1.2
Bread and Rolls	1.4	1.3	0.0	1.2
Eggs	1.3	1.2	0.1	1.1
Pizza	1.3	1.1	0.2	1.1
Eaten Out Main Meal Component	1.2	0.0	1.2	1.0
Total Breakfast Cereal	1.0	1.0	0.0	0.8
Other Food Groupings	7.0	6.3	1.1	6.1

unclassified foods = mainly eaten out such as 'meal', 'school meal' or 'meal at work'

Table 3 Annexe 3: Mean contribution of foods providing more than 1% of saturated fats (2013-2015)

Food Grouping	% Contribution to Saturated Fats			Saturated Fats g
	All	Household	Eaten Out	All
Total Spreading Fats	16.0	15.9	0.1	5.1
Total Processed Red Meat	12.0	11.0	1.0	3.8
Total Milk	8.5	8.3	0.2	2.7
Total Cheese	8.4	8.3	0.0	2.7
Sweet Biscuits	7.7	7.6	0.1	2.5
Total Confectionery	6.3	6.0	0.3	2.0
Unclassified Foods	5.8	2.3	3.5	1.8
Cakes, Pastries and Puddings	3.7	3.1	0.5	1.2
Ice Cream and Dairy Desserts	3.7	3.5	0.2	1.2
Unprocessed Red Meat	3.7	3.6	0.1	1.2
Cream	2.6	2.6	0.0	0.8
Cooking Oil	2.1	2.1	0.0	0.7
Poultry	1.8	1.6	0.2	0.6
Crisps and Savoury Snacks	1.6	1.2	0.4	0.5
Pizza	1.4	1.2	0.2	0.4
Ready Meals	1.2	1.2	0.0	0.4
Sandwiches	1.2	0.3	0.9	0.4
Processed Potatoes	1.1	0.9	0.2	0.3
Eggs	1.0	0.9	0.1	0.3
Nuts	1.0	1.0	0.0	0.3
Savoury Sauces and Dressings	1.0	0.9	0.1	0.3
Other Food Groupings	8.2	6.8	1.6	2.7

unclassified foods = mainly eaten out such as 'meal', 'school meal' or 'meal at work'

Table 4 Annexe 3: Mean contribution of foods providing more than 1% of free sugars (NMES) (2013-2015)

Food Grouping	% Contribution to free sugars (NMES)			free sugars (NMES) g
	All	Household	Eaten Out	All
Sugar Containing Soft Drinks	20.8	17.0	3.8	14.9
Total Confectionery	17.9	16.9	0.9	12.8
Sugar	13.3	13.2	0.0	9.5
Sweet Biscuits	8.0	7.9	0.1	5.7
Total Fruit and Vegetables	6.8	6.4	0.4	4.9
Cakes, Pastries and Puddings	6.2	5.6	0.6	4.4
Ice Cream and Dairy Desserts	5.1	4.9	0.2	3.7
Jam, Marmalade, Honey and Sweet Spreads	4.9	4.9	0.1	3.5
Total Breakfast Cereal	3.5	3.5	0.0	2.5
Savoury Sauces and Dressings	2.6	2.6	0.0	1.9
Alcoholic Drinks	2.5	1.0	1.5	1.8
Yoghurt and Fromage Frais	2.4	2.4	0.0	1.7
Unclassified Foods	1.0	0.7	0.4	0.7
Other Food Groupings	5.0	4.1	0.9	3.7

unclassified foods = mainly eaten out such as 'meal', 'school meal' or 'meal at work'

Table 5 Annexe 3: Impact of reducing intakes of discretionary foods by 5%, 10%, 25% and 50%* and % change on progress towards the Scottish dietary goals for fat, saturated fats, free sugars (NMES) and fibre.**

	Scottish Dietary Goal	2013-2015 Intake	-5%	%	-10%	%	-25%	%	-50%	%
Fat	≤35% food energy	**39.3%**	39.0	*-0.76*	38.7	*-1.53*	37.8	*-3.82*	36.1	*-8.14*
Saturated fats	≤11% of food energy	**15.3%**	15.2	*-0.65*	15.1	*-1.31*	14.7	*-0.04*	14.0	*-8.50*
Free sugars (NMES)	≤5% of total energy	**14.3%**	14.0	*-2.10*	13.7	*-4.20*	12.7	*-0.11*	11.0	*-23.08*
Dietary Fibre	18g/day***	**12.0g**	11.9	*-0.83*	11.9	*-0.83*	11.7	*-0.03*	11.4	*-5.00*

* The reduction was based on a straightforward calculation using the most recent three years of published data based on the total average energy intake.[2] ** The % change was calculated by FSS.

****This is the dietary reference value of 18g/day of non-starch polysaccharides, defined by the Englyst method, prior to the revised SACN recommendation in 2015 and the revised SDGs, which equates to about 23-24 g/day of dietary fibre if analysed using these AOAC methods. The new recommendation is for 30g/day using the AOAC method. Based on FSS published data.*

13. Annexe 4: Contribution of foods and drinks to retail purchase of nutrients

13.1 FSS uses market research data from Kantar Worldpanel (KWP) to monitor food purchasing patterns in Scotland. Details of the panel methodology and sample size can be found in the published report[6]. Purchase volumes from KWP into the home can be linked to 'back of pack' nutrient information, (only 'total sugars' is available, not 'free' sugars or 'non milk extrinsic sugars' (NMES)), and therefore be used to track the purchase of foods and associated nutrients over time. This has allowed us to link and monitor the purchase (including on price promotion) of around 80 food categories and the nutrients of public health concern from 2010 onwards.

13.2 Intake data on the contribution of discretionary foods to salt intakes are not available,[2] therefore data on salt (sodium) retail purchase from discretionary foods has been used as a proxy measure, provided in Table 1 below.

Table 1 Annexe 4: % contribution of discretionary categories to retail purchase of sodium in Scotland (2010 vs. 2016)

Category	% of sodium purchase - 2010	% of sodium purchase - 2016
Total Bread & Morning Goods (Ambient)	10.5%	12.6%
Total Red Meat & Products	9.0%	12.4%
Table Salt	19.2%	11.8%
Savoury Home Cooking (excl. Salt)	5.2%	7.2%
Total Cheese	2.8%	4.5%
Total Milk	3.2%	3.6%
Total Biscuits	2.4%	3.4%
Crisps and savoury snacks	2.5%	3.4%
Yellow Fats	2.7%	3.0%
Total Pickle, Table Sauce & Condiment	2.5%	3.0%
Ready Meals	2.2%	2.8%
Total Poultry & Products	1.6%	2.4%
Total Cakes & Pastries (Ambient)	2.1%	2.2%
Total Vegetables & Salad Leaves	0.8%	1.8%
Total Fish	1.4%	1.6%
Total Breakfast Cereals (incl. Rolled Oats and Oatmeal)	1.7%	1.5%
Savoury Pies and Pasties	1.4%	1.5%
Pizza	1.0%	1.5%
Frozen Processed Potatoes (incl. Chips)	0.8%	1.1%
Canned Beans in Sauce	0.9%	0.9%

Table 2 Annexe 4: % contribution of discretionary categories, ice-cream, edible ices and dairy desserts to retail purchase of calories, total fats, saturated fats and total sugars in 2016

	Category	**Calories kcal (%)**	**Total fat (%)**	**Saturated Fats (%)**	**Total sugars (%)**	**Sodium (%)**
Discretionary categories	Cakes and pastries	4.1	3.9	4.0	5.4	2.2
	Biscuits	6.6	6.9	8.7	7.0	3.4
	Confectionery	5.3	5.4	8.0	11.8	0.9
	Crisps and savoury snacks	3.7	5.3	1.6	0.5	3.4
	Regular soft drinks	1.6	0.0	0.0	6.8	0.3
	Puddings and desserts	1.3	1.3	2.0	2.3	0.5
	Subtotal	***22.6%***	***22.8%***	***24.3%***	***33.8%***	***10.7%***
Largely discretionary categories	Ice cream	1.0	1.2	2.1	1.9	0.2
	Edible ices and frozen dairy desserts	0.6	0.9	1.5	1.1	0.1
	TOTAL	**24.2%**	**24.9%**	**27.9%**	**36.8%**	**11.0%**

Table 3 Annexe 4: % contribution of discretionary categories purchased through retail price promotion to purchase of calories, total fats, saturated fats and total sugars in 2016

		Calories kcal (%)	**Total fat (%)**	**Saturated Fats (%)**	**Total sugars (%)**	**Sodium (%)**
Discretionary categories	Biscuits	2.9	3.1	3.9	3.3	1.5
	Crisps and savoury snacks	1.9	2.7	0.7	0.3	1.8
	Confectionery	2.6	2.9	4.3	5.7	0.4
	Cakes and pastries	1.4	1.4	1.5	2.1	0.7
	Sugar containing soft drinks	0.9	0	0	3.7	0.1
	Puddings and desserts	0.6	0.6	0.9	1.0	0.2
	Subtotal	**10.3%**	**10.7%**	**11.3%**	**16.1%**	**4.7%**
Largely discretionary categories	Ice-cream	0.4	0.5	0.9	0.8	0.1
	Edible ices and frozen dairy desserts	0.3	0.4	0.6	0.5	0
	TOTAL	**11.0%**	**11.6%**	**12.8%**	**17.4%**	**4.8%**

14. Annexe 5: Contribution of discretionary foods to intakes of essential nutrients

Table 1a Annexe 5: % Contribution of discretionary foods to intakes of calories and selection of vitamins and minerals in girls (4-18 yrs) in Scotland.

	% contribution to total calories	Vitamin D	Folate	Iron	Calcium	Magnesium	Zinc	Selenium	Iodine
Biscuits	4	1	2	4	2	3	2	2	1
Buns, cakes, pastries and fruit pies	4	5	2	3	2	2	2	2	2
Puddings	1	1	0	0	1	1	1	0	2
Savoury snacks	4	0	3	2	1	3	1	1	0
Confectionery	4	0	1	2	2	3	2	1	3
Regular soft drinks	4	0	1	1	1	1	0	0	0
TOTAL	**22%**	**7%**	**9%**	**12%**	**9%**	**13%**	**8%**	**6%**	**8%**

Table 1b Annexe 5: Contribution of discretionary foods to intakes of calories and selection of vitamins and minerals in boys (4-18 yrs) in Scotland.

	% contribution to total calories	Vitamin D	Folate	Iron	Calcium	Magnesium	Zinc	Selenium	Iodine
Biscuits	4	0	1	3	2	2	2	1	1
Buns, cakes, pastries and fruit pies	3	4	1	2	2	2	1	2	2
Puddings	1	1	0	1	1	1	1	1	1
Savoury snacks	4	0	2	2	1	3	1	0	0
Confectionery	5	0	1	2	3	3	2	1	3
Regular soft drinks	5	0	1	2	2	1	0	0	0
TOTAL	**21%**	**5%**	**6%**	**12%**	**11%**	**12%**	**7%**	**5%**	**7%**

Table 2 Annexe 5: Contribution of discretionary foods to intakes of a selection of vitamins and minerals in adults (19-64 yrs) in Scotland

Discretionary categories	Vitamin D	Folate	Iron	Calcium	Magnesium	Zinc	Selenium	Iodine
Biscuits	0.4	1.1	3.1	1.7	2.5	1.8	1.2	0.8
Buns, cakes, pastries and fruit pies	3.1	1.2	2.2	1.7	1.4	1.2	1.6	1.7
Puddings	0.8	0	0.3	0.8	0.4	0.4	0.4	1.0
Savoury snacks	0.0	1.4	1.2	0.4	1.6	0.7	0.2	0.1
Confectionery	0.3	0.5	1.4	1.9	1.9	1.1	0.7	2.1
Regular soft drinks	0.0	0.2	0.8	1.0	0.6	0.0	0.0	0.0
TOTAL CONTRIBUTION TO INTAKE	**4.6%**	**4.4%**	**9.0%**	**7.5%**	**8.4%**	**5.2%**	**4.1%**	**5.7%**

Table 3 Annexe 5: Estimated contributions of discretionary foods to intakes of a selection of vitamins and minerals in adults (19-64 yrs) in Scotland as a result of reductions in intakes (-5%, -10% and 50%) of discretionary foods

Discretionary categories	Vitamin D	Folate	Iron	Calcium	Magnesium	Zinc	Selenium	Iodine
TOTAL CONTRIBUTION TO INTAKE	**4.6%**	**4.4%**	**9.0%**	**7.5%**	**8.4%**	**5.2%**	**4.1%**	**5.7%**
5% REDUCTION IN INTAKES	**4.4% (-0.2%)**	**4.2% (-0.2%)**	**8.6% (-0.4%)**	**7.1% (-0.4%)**	**8.0% (-0.4%)**	**4.9% (-0.3%)**	**3.9% (-0.2%)**	**5.4% (-0.3%)**
10% REDUCTION IN INTAKES	**4.1% (-0.5%)**	**4.0% (-0.4%)**	**8.1% (-0.9%)**	**6.8% (-0.7%)**	**7.6% (-0.8%)**	**4.7% (-0.5%)**	**3.7% (-0.4%)**	**5.1% (-0.6%)**
50% REDUCTION IN INTAKES	**2.3% (-2.0%)**	**2.2% (-2.0%)**	**4.5% (-4.0%)**	**3.8% (-4.0%)**	**4.2% (-4.0%)**	**2.6% (-3.0%)**	**2.0% (-2.0%)**	**2.8% (-3.0%)**

Table 4 Annexe 5: Contribution of dairy desserts and ice-creams to intakes of a selection of vitamins and minerals in adults and children in Scotland.

Discretionary categories	Vitamin D	Folate	Iron	Calcium	Magnesium	Zinc	Selenium	Iodine
Adults aged 19-64 yrs								
Yogurt, fromage frais and other dairy desserts	0.8	0.7	0.4	4.5	1.6	1.7	1.4	5.0
Ice-cream	0.9	0.1	-	0.6	0.3	0.2	0.2	0.9
Total	**1.7**	**0.8**	**0.4**	**5.1**	**1.9**	**1.9**	**1.6**	**5.9**
Girls aged 4-18 yrs								
Yogurt, fromage frais and other dairy desserts	3.8	0.8	0.5	4.7	2.0	2.1	2.1	5.7
Ice-cream	2.9	0.4	-	1.5	0.9	0.7	0.7	3.0
Total	**6.7**	**1.2**	**0.5**	**6.2**	**2.9**	**2.8**	**2.8**	**8.7**
Boys aged 4-18 yrs								
Yogurt, fromage frais and other dairy desserts	3.5	1.0	0.8	4.8	2.4	2.4	2.6	6.0
Ice-cream	2.4	0.3	-	1.1	0.7	0.5	0.5	1.8
Total	**5.9**	**1.3**	**0.8**	**5.9**	**3.1**	**2.9**	**3.1**	**7.8**

15. Annexe 6: Energy density and obesity

15.1 The energy density of a food is defined as the number of calories contained per gram and is dependent upon the composition of the foodstuff. The water content of a product will reduce energy density (because it contains no calories per gram), whereas the presence of fat (with nine calories per gram) and/or sugar (with four calories per gram) will increase energy density.

15.2 Energy dense foods have been defined by WCRF[46] as those with an energy content of more than about 225–275 kcal per 100g. Sweet biscuits (average 477 kcal per 100g), confectionery (average 435 kcal per 100g), crisps and savoury snacks (average 501 kcal per 100g) and cakes, pastries and puddings (average 362 kcal per 100g), are all very energy dense.[46]

15.3 WCRF recommended in 2007 that the average energy density of diets should to be lowered towards 125 kcal per 100g, which is reflected in the Scottish dietary goals.[47,22]

15.4 There is also an inverse relation between energy density and energy cost (£/kilocalorie), such that energy-dense foods and diets may often represent the lowest-cost option to the consumer.[48,49]

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