# Consumption of foods and drinks considered within policy proposals for the restriction of HFSS promotions in adults (16+ yr) living in Scotland 

## 1. Introduction

In 2016 and 2017 Food Standards Scotland (FSS) proposed a suite of measures to improve dietary health in Scotland, including a recommendation that the promotion of high fat, sugar or salt (known as HFSS) food and drink be restricted. This recommendation was incorporated into the Scottish Government's (SG) Healthier Future Delivery Plan, which sets out a wide range of actions to support people to eat well and maintain a healthy weight, while reducing diet-related inequalities.

In July 2022, the SG consulted on proposals to restrict promotions of food and drink high in fat, sugar or salt. The consultation proposed to target discretionary food and drink products: confectionery, sweet biscuits, crisps and savoury snacks, cakes and sweet pastries, sugary drinks, puddings, as well as ice cream and dairy desserts. These products are high in calories, fats and sugar and represent around $25 \%$ of all food and drink volume purchased into the home. The consultation also considered targeting additional categories already captured by promotional restrictions in England, including breakfast cereals, sweetened yoghurt and fromage frais, pizza, ready meals and roast potatoes, chips and similar potato products.

The SG plan to consult on the detail of proposed regulations to restrict the promotion of less healthy food and drinks in autumn 2023. This will include proposals to restrict prominent in-store price promotions which encourage people to buy more than they actually need.

## 2. Aims

FSS evidence demonstrated significant changes to shopping and eating behaviours in Scotland during the COVID-19 pandemic, including increased use of online delivery services. Data from the 2021 Scottish Health Survey (SHeS) provides an up-to date view of dietary intakes in Scotland following the pandemic and other global? issues such as the UK's exit from the EU and the climate and ecological emergency.

The aim of this analyses was to use 2021 SHeS Intake24 data to provide up-to date information on the consumption of discretionary foods and additional categories considered within policy proposals for the restriction of HFSS promotions, by adults (16+ years).

## 3. Methods

### 3.1 Intake24

In 2018, as part of our ongoing dietary surveillance programme, FSS piloted the use of an online 24 hour recall dietary assessment method (called Intake24) in the SHeS. Data from Intake24 provided an estimate of dietary intakes in >1000 adults (16+y) living in Scotland in 2018. Intake24 has since been included in the 2021 SHeS , providing an estimate of dietary intake in almost 3,500 adults (16+y) living in Scotland in 2021. Intake24 is also the methodology used to collect dietary intake data in the National Diet and Nutrition Survey (NDNS).

Respondents who consented to take part in the diet module as part of the 2021 SHeS were invited to undertake dietary recalls on two separate occasions where they input details of their food and beverage consumption for the previous day. Two recalls, rather than a single recall, were requested to get a better understanding of an individual's typical diet. Online Intake24 dietary recalls were completed via a link sent by text or email directly to participants by the interviewer within minutes of giving consent. The second recall was completed within seven days of the initial recall. Days for dietary recall were assigned at random with the aim of achieving a proportionate spread of week and weekend days.

## More detail on the 2021 SHeS methodology.

### 3.2 Discretionary and additional categories

The categories included within the analyses have been based on those outlined within the June 2022 consultation on promotional restrictions. The consultation considered both discretionary and 'additional' categories contributing to intakes of calories, fats and free sugars.

Categories were matched as far as possible however, major recategorisation of categories was not undertaken and therefore there were some differences in definitions. For example, puddings have not been analysed separately and were included within 'cakes, pastries and puddings'. Similarly, dairy desserts were included within 'yoghurts, fromage frais and dairy desserts' rather than alongside ice-cream as detailed within the consultation. For the purposes of these analyses, ice cream and ice lollies have been included within the definition of total discretionary food and drink.

It is important to note that the consultation proposed to exclude products within food categories that are non-HFSS, for example sugar free sweets, or lower fat, sugar or salt breakfast cereals. The analyses presented in this report however were unable to exclude any non-HFSS food or drink items within the food categories, for example breakfast cereals which pass the 2004/05 Nutrient Profiling Model, as this level of detail is not available within Intake24.

Detailed definitions of each individual category are provided in Annex 1. Table 1 below provides a summary of the categories included within these analyses.

Table 1: Summary of categories included

| Category | Definition |
| :--- | :--- |
| Total discretionary food and drink | Sweet biscuits, cakes, pastries and <br> puddings, crisps and savoury snacks, <br> confectionery, ice cream and ice lollies, <br> sugar-containing soft drinks |
| Total additional categories | Pizza, breakfast cereals, ready meals, <br> yoghurts, fromage frais and dairy <br> desserts, roast potatoes, chips and other <br> processed potato products |

### 3.3 Analysis

Analyses were conducted using SPSS Version 17. Mean, median intakes and contribution to calories and macronutrients were calculated for each individual category, including splits by age, sex and SIMD (Scottish Index of Multiple Deprivation ${ }^{1}$ ). As noted within Section 6 on Limitations, statistical testing to compare differences in intakes between categories and groups has not been carried out. Standard deviations, calculated to demonstrate variation within the sample, alongside the $2.5^{\text {th }}$ and $97.5^{\text {th }}$ percentiles are presented within the full data tables in Annex 2 and 3. Consumer only intakes have also been provided within these annexes.

Within this paper, mean intakes have been presented for all respondents who completed two recalls, to represent intake at a population level in Scotland. Intake24 weights (already prepared for the SHeS dataset) were applied, to account for the probability of selection and non-response to the survey. Find more details on the weighting in the SHeS technical report for 2021.

Topics and considerations for future analyses could include:

- Contribution of foods and drinks to energy density.
- Frequency of consumption, including the proportion of individuals consuming particular foods multiple times each day.
- Intakes of a broader range of foods and drinks, including relative contribution to calories and macronutrients.
- Assessing the statistical significance of differences in intakes between demographic groups.
- Differences in contribution of high-fibre and other breakfast cereals to intakes of energy and macronutrients.

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## 4. Results

### 4.1 About the sample

The overall sample included a total of 3,447 respondents, with 3,042 ( $88 \%$ ) of those completing two recalls. Analyses have been based on those who completed two recalls which provides a better indicator of intake than a single recall.

Table 2 provides a breakdown of the unweighted base by age, sex and SIMD, alongside the weighted percentages and mean total energy intake for each group. Overall, the average adult in Scotland consumed 1632 kcal per day which is considerably lower than average energy requirements and improbable given the proportion of the population currently living with overweight and obesity. Section 6 on Limitations provides more detail in relation to the impact of misreporting.

Table 2: Sample demographics (by age, sex and SIMD) and total energy intake

|  | $N$ (unweighted) | $\%$ <br> (weighted) | Mean total <br> energy intake ${ }^{2}$ <br> (kcal/d, weighted) |  |
| :--- | :---: | :---: | :---: | :---: |
| TOTAL | $\mathbf{3 0 4 2}$ | $\mathbf{1 0 0}$ | 1632 |  |
| Of which: |  |  |  |  |
| $16-24 y$ | 133 | 10.4 | 1604 |  |
| $25-34 y$ | 340 | 16.2 | 1640 |  |
| $35-44 y$ | 436 | 15.4 | 1772 |  |
| $45-54 y$ | 517 | 16.5 | 1628 |  |
| $55-64 y$ | 692 | 17.4 | 1627 |  |
| $65-74 y$ | 658 | 13.4 | 1558 |  |
| $75+y$ | 266 | 10.7 | 1548 |  |
| Of which: | 1222 | 47.0 | 1786 |  |
| Male | 1820 | 53.0 | 1495 |  |
| Female |  |  |  |  |
| Of which: | 367 | 18.1 | 1575 |  |
| SIMD1 = Most Deprived | 528 | 20.5 | 1604 |  |
| 2 | 632 | 19.2 | 1632 |  |
| 3 | 797 | 21.0 | 1602 |  |
| 4 | 718 | 21.2 | 1736 |  |
|  |  |  |  |  |

[^1]
### 4.2 Mean intake and contribution of discretionary categories to calories and macronutrients

Table 3 provides a breakdown of mean intakes and contribution of discretionary categories to calories and macronutrients among adults (16+y) living in Scotland, in 2021. Note, values within the tables have been rounded to the nearest whole number.

The mean intake from all discretionary foods was $61 \mathrm{~g} / \mathrm{d}$ (SD: $60 \mathrm{~g} / \mathrm{d}$ ), with an additional $77 \mathrm{~g} / \mathrm{d}$ (SD: $186 \mathrm{~g} / \mathrm{d}$ ) coming from sugar-containing soft drinks. On average, these discretionary foods and sugar-containing soft drinks provided 260kcal per day, accounting for $15 \%$ of total energy intakes. The contribution was $17 \%$ and $18 \%$ of total fat and saturated fat, and $38 \%$ of free sugars intake.

For individual discretionary food categories (Table 3), sweet biscuits were the biggest contributor to intakes of calories, fats and free sugars. Sugar-containing soft drinks alone contributed $9 \%$ to intakes of free sugars.

Table 3: Mean intakes and contribution of discretionary foods and drinks to calories and macronutrients in adults (16+y) living in Scotland, in 2021 ( $n=3042$ )

| Food Group | \% <br> consumers <br> in sample | Mean <br> intake <br> (g/d) | \% Total <br> energy | \% <br> Total <br> fat | \% <br> Saturated <br> fat | \% Free <br> sugars |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Sweet biscuits | $46 \%$ | 15 | 4 | 5 | 6 | 10 |
| Cakes, sweet pastries <br> \& puddings | $39 \%$ | 20 | 4 | 4 | 5 | 8 |
| Crisps \& savoury <br> snacks | $33 \%$ | 9 | 3 | 4 | 1 | 0 |
| Confectionery | $31 \%$ | 10 | 3 | 4 | 5 | 9 |
| Ice cream \& ice lollies | $14 \%$ | 6 | 1 | 1 | 2 | 3 |
| Total discretionary <br> foods (excluding <br> sugar-containing soft <br> drinks) | $\mathbf{8 2 \%}$ | $\mathbf{6 1}$ | $\mathbf{1 4}$ | $\mathbf{1 7}$ | $\mathbf{1 8}$ | $\mathbf{2 9}$ |
| Sugar-containing soft <br> drinks | $26 \%$ | 77 | 1 | 0 | 0 | 9 |

Table 4 provides a breakdown of the contribution the additional categories made to intakes of calories and macronutrients among adults (16+y) living in 2021.

In total, the mean intake of these categories was $124 \mathrm{~g} / \mathrm{d}$ (SD: $129 \mathrm{~g} / \mathrm{d}$ ), providing an average of 207 kcal per day and accounting for $13 \%$ of energy intakes, $11 \%$ of total fat and free sugars intakes, and $10 \%$ of saturated fat intakes.

Of the additional foods, breakfast cereals contributed the most to energy, total fat and free sugars ( $5 \%, 3 \%$ and $5 \%$ respectively). The yoghurts, fromage frais and dairy desserts category was the top contributor to intakes of saturated fat, alongside pizza (3\% each).

In total, discretionary foods, sugar-containing soft drinks and the additional foods contributed $28 \%$ to average intakes of calories, $28 \%$ to average intakes of total fat and saturated fat and $49 \%$ to average intakes of free sugars among adults in 2021.

Table 4: Contribution of additional foods to intakes of calories and macronutrients in adults (16+y) living in Scotland, in 2021 ( $n=3042$ )

| Food Group | $\%$ <br> consumers <br> in sample | Mean <br> (g/d) | \% Total <br> energy | $\%$ <br> Total <br> fat | \%aturated <br> fat | Free <br> sugars |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Breakfast cereals | $54 \%$ | 45 | 5 | 3 | 2 | 5 |
| Roast potatoes, chips and <br> similar roasted potato <br> products | $33 \%$ | 21 | 2 | 2 | 1 | 0 |
| Pizza | $11 \%$ | 18 | 2 | 2 | 3 | 1 |
| Yoghurts, fromage frais and <br> dairy desserts | $29 \%$ | 26 | 2 | 2 | 3 | 3 |
| Ready Meals | $6 \%$ | 13 | 1 | 1 | 2 | 1 |
| Total additional foods | $\mathbf{8 2 \%}$ | $\mathbf{1 2 4}$ | $\mathbf{1 3}$ | $\mathbf{1 1}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ |

### 4.3 Mean intake and contribution to calories and macronutrients, by age

Table 5 provides a breakdown of intakes and the contribution combined categories made to calories and macronutrients in adults (16+ years) living in Scotland, by age in 2021. Annex 2 and 3 provides a full breakdown by individual food categories.

Intakes of discretionary foods were greatest within those aged 75 years and above ( $71 \mathrm{~g} / \mathrm{d}$, SD: $62 \mathrm{~g} / \mathrm{d}$ ). Contribution of discretionary foods to intakes of energy, saturated fat and free sugars was also greatest among this age group, representing 16\%, 20\% and $35 \%$ respectively. Individuals aged 16-24 years consumed the lowest quantity of discretionary foods ( $54 \mathrm{~g} / \mathrm{d}$, SD: $50 \mathrm{~g} / \mathrm{d}$ ) and contributed the least to intakes of free sugars (23\%) compared to other age groups.

In contrast however, those in the younger age groups consumed the greatest quantity of sugar-containing soft drinks, with an average intake (SD) of $138 \mathrm{~g} / \mathrm{d}$ ( $189 \mathrm{~g} / \mathrm{d}$ ) among 16-24 year olds and $150 \mathrm{~g} / \mathrm{d}$ ( $286 \mathrm{~g} / \mathrm{d}$ ) among 25-34 year olds. These drinks also accounted for the greatest share of energy and free sugars intakes among those aged 16-34 years compared to the other age groups.

There were also differences in intakes of individual discretionary food and drink categories and their contribution to energy and macronutrients (Annex 2). Individuals aged 75 years and above had the highest intakes of sweet biscuits ( $21 \mathrm{~g} / \mathrm{d}, \mathrm{SD}: 27 \mathrm{~g} / \mathrm{d}$ ), cakes, sweet pastries and puddings ( $33 \mathrm{~g} / \mathrm{d}$, SD: $44 \mathrm{~g} / \mathrm{d}$ ) and ice cream and ice lollies ( $9 \mathrm{~g} / \mathrm{d}$, SD: $21 \mathrm{~g} / \mathrm{d}$ ). This age group also had the lowest intake of crisps and savoury snacks ( $3 \mathrm{~g} / \mathrm{d}$, SD: $10 \mathrm{~g} / \mathrm{d}$ ) and confectionery ( $5 \mathrm{~g} / \mathrm{d}$, SD: $12 \mathrm{~g} / \mathrm{d}$ ).

In relation to the additional foods, individuals aged 16-24 years had the highest intake compared to other age groups ( $150 \mathrm{~g} / \mathrm{d}, \mathrm{SD}: 154 \mathrm{~g} / \mathrm{d}$ ) and those aged $45-54$ years had the lowest ( $114 \mathrm{~g} / \mathrm{d}$, SD: $127 \mathrm{~g} / \mathrm{d}$ ). Those aged $16-24$ year olds consumed the greatest quantity of roast potatoes, chips and other processed potato products (32g/d, SD: $47 \mathrm{~g} / \mathrm{d}$ ) and ready meals ( $30 \mathrm{~g} / \mathrm{d}$, SD: $106 \mathrm{~g} / \mathrm{d}$ ) compared to other age groups. Intakes
of yoghurts, fromage frais and dairy desserts were highest among those aged 65-74 ( $32 \mathrm{~g} / \mathrm{d}$, SD: $55 \mathrm{~g} / \mathrm{d}$ ) and $75+$ years ( $34 \mathrm{~g} / \mathrm{d}$, SD:59g/d) and similarly for breakfast cereals.

Table 5: Mean intakes and contribution to calories and macronutrients in adults (16+y) living in Scotland, in 2021, by age (years [ $n=3042$ ])

|  |  | Mean intake ( $\mathrm{g} / \mathrm{d}$ ) | \% Total energy | \% Total fat | Saturated fat | \% Free sugars |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total discretionary foods | 16-24 | 54 | 14 | 18 | 18 | 23 |
|  | 25-34 | 63 | 15 | 19 | 19 | 27 |
|  | 35-44 | 64 | 14 | 17 | 18 | 29 |
|  | 45-54 | 59 | 14 | 17 | 18 | 30 |
|  | 55-64 | 55 | 12 | 15 | 16 | 28 |
|  | 65-74 | 59 | 13 | 15 | 17 | 33 |
|  | 75+ | 71 | 16 | 18 | 20 | 35 |
| Sugar-containing soft drinks | 16-24 | 138 | 2 | 0 | 0 | 16 |
|  | 25-34 | 150 | 3 | 0 | 0 | 16 |
|  | 35-44 | 86 | 1 | 0 | 0 | 10 |
|  | 45-54 | 65 | 1 | 0 | 0 | 8 |
|  | 55-64 | 44 | 1 | 0 | 0 | 6 |
|  | 65-74 | 22 | 0 | 0 | 0 | 3 |
|  | 75+ | 35 | 1 | 0 | 0 | 4 |
| Total additional foods | 16-24 | 150 | 18 | 17 | 16 | 17 |
|  | 25-34 | 122 | 14 | 12 | 12 | 10 |
|  | 35-44 | 120 | 12 | 10 | 10 | 11 |
|  | 45-54 | 114 | 12 | 10 | 9 | 9 |
|  | 55-64 | 119 | 12 | 10 | 9 | 10 |
|  | 65-74 | 125 | 11 | 9 | 8 | 10 |
|  | 75+ | 129 | 13 | 9 | 8 | 11 |

### 4.4 Mean intake and contribution to calories and macronutrients, by sex

Table 6 provides a breakdown of intakes and the contribution combined categories made to calories and macronutrients in adults (16+y) living in Scotland, by sex in 2021. Annex 2 and 3 provides a full breakdown by individual food categories.

Average daily intakes of discretionary foods were very similar between males ( $60 \mathrm{~g} / \mathrm{d}$, SD: $64 \mathrm{~g} / \mathrm{d}$ ) and females ( $61 \mathrm{~g} / \mathrm{d}$, SD: $55 \mathrm{~g} / \mathrm{d}$ ) in 2021 , however the contribution these foods made to intakes of energy, fats and free sugars was greater among females compared to males. In contrast, males consumed a greater quantity of sugarcontaining soft drinks compared to females ( 89 g vs. $66 \mathrm{~g} / \mathrm{d}$, SD: 211 g vs. $159 \mathrm{~g} / \mathrm{d}$ ) and, although the contribution to energy was similar between males and females, these drinks contributed more to intakes of free sugars in males ( $10 \%$ vs. $8 \%$ ). As noted within the Limitations section, differences in the contribution made by categories between demographic groups may be influenced by differences in overall intakes. Additionally, it should also be noted that, on average, men require more calories than women.

Whilst the contribution of sweet biscuits and ice cream and lollies to energy was similar between males and females, cakes, sweet pastries and puddings, crisps and savoury snacks and confectionery accounted for a greater proportion of energy in females compared to males (Annex 2). Similarly, all discretionary foods (with the exception of ice cream and ice lollies) contributed more to intakes of total fat among females compared to males.

Males consumed a greater quantity of the additional categories combined (137g/d, SD: $147 \mathrm{~g} / \mathrm{d}$ ) compared to females (112g/d, SD: $109 \mathrm{~g} / \mathrm{d}$ ), and a greater proportion of energy, fats and free sugars came from these foods in 2021. With the exception of yoghurts, fromage frais and dairy desserts, average intakes of all additional categories was greater among males (Annex 3).

Table 6: Mean intakes and contribution to calories and macronutrients in adults (16+y) living in Scotland, in 2021, by sex ( $n=3042$ )

|  |  | Mean intake <br> (g/d) | \% Total <br> energy | \% <br> Total <br> fat | \% <br> Saturated <br> fat | \% Free <br> sugars |
| :--- | ---: | :---: | :---: | :---: | :---: | :---: |
| Total discretionary foods | Male | 60 | 12 | 15 | 16 | 25 |
|  | Female | 61 | 15 | 19 | 20 | 33 |
| Sugar-containing soft <br> drinks | Male | 89 | 1 | 0 | 0 | 10 |
|  | Female | 66 | 1 | 0 | 0 | 8 |

### 4.5 Mean intake and contribution to calories and macronutrients, by SIMD

Table 7 provides a breakdown of intakes and the combined contribution categories made to calories and macronutrients in adults ( $16+y$ ) living in Scotland, by SIMD in 2021. Annex 2 and 3 provides a full breakdown by individual food categories.

Overall, individuals living in the least deprived communities consumed the greatest quantity of discretionary foods ( $68 \mathrm{~g} / \mathrm{d}$, SD: $63 \mathrm{~g} / \mathrm{d}$ ) and those in the most deprived consumed the lowest ( $52 \mathrm{~g} / \mathrm{d}, \mathrm{SD}: 54 \mathrm{~g} / \mathrm{d}$ ). The contribution of these foods to intakes of energy, fats and free sugars varied across SIMD groups, and by individual discretionary categories (Annex 2) with no obvious pattern. Therefore, whilst there are differences in the absolute gram intakes of these categories differed between SIMD quintiles, differences in their contribution to calories and macronutrients was less pronounced. For example, the contribution of sweet biscuits to intakes of energy ranged from 3\% in SIMD 2 to 5\% in SIMD groups 1, 3 and 5. Similarly, the contribution of confectionery to free sugars intake was $9 \%$ within SIMD groups 1 and 2, 7\% in SIMD 4 and $10 \%$ in SIMD groups 3 and 5.

Intakes of sugar-containing soft drinks was highest among those living in the most deprived communities ( $113 \mathrm{~g} / \mathrm{d}$, SD: $223 \mathrm{~g} / \mathrm{d}$ ) as was their contribution to free sugars intake (14\%). The contribution of these drinks to intakes of free sugars generally declined with decreasing levels of deprivation (14\% in SIMD 1 compared to $6 \%$ in SIMD 5).

In relation to the additional categories, individuals living in SIMD 3 consumed the greatest quantity ( $131 \mathrm{~g} / \mathrm{d}$, SD: $129 \mathrm{~g} / \mathrm{d}$ ), with those in the most deprived consuming the least ( $109 \mathrm{~g} / \mathrm{d}$, SD: $124 \mathrm{~g} / \mathrm{d}$ ). The contribution of these additional foods to calories and macronutrients was generally similar across the SIMD groups, with the exception of SIMD 2 where these foods made a greater contribution compared to other SIMD groups. Pizza and ready meals in particular contributed a greater proportion to intakes of energy, fats and free sugars in SIMD 2 compared to other SIMD groups.

Table 7: Mean intakes and contribution to calories and macronutrients in adults (16+y) living in Scotland, in 2021, by SIMD ( $n=3042$ )

|  |  | Mean intake ( $\mathrm{g} / \mathrm{d}$ ) | \% Total energy | $\begin{aligned} & \text { \% Total } \\ & \text { fat } \end{aligned}$ | Saturated fat | \% Free sugars |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total discretionary foods | 1=Most Deprived | 52 | 13 | 15 | 17 | 27 |
|  | 2 | 55 | 13 | 17 | 16 | 24 |
|  | 3 | 66 | 15 | 18 | 20 | 34 |
|  | 4 | 61 | 14 | 16 | 17 | 29 |
|  | $\begin{aligned} & 5=\text { Least } \\ & \text { Deprived } \end{aligned}$ | 68 | 15 | 18 | 19 | 33 |
| Sugar-containing softdrinks | 1=Most Deprived | 113 | 2 | 0 | 0 | 14 |
|  | 2 | 104 | 2 | 0 | 0 | 12 |
|  | 3 | 71 | 1 | 0 | 0 | 8 |
|  | 4 | 42 | 1 | 0 | 0 | 5 |
|  | $\begin{aligned} & 5=\text { Least } \\ & \text { Deprived } \end{aligned}$ | 59 | 1 | 0 | 0 | 6 |
| Total additional foods | 1=Most Deprived | 109 | 12 | 10 | 9 | 8 |
|  | 2 | 129 | 15 | 13 | 13 | 15 |
|  | 3 | 131 | 12 | 10 | 10 | 9 |
|  | 4 | 121 | 12 | 10 | 10 | 11 |
|  | $\begin{aligned} & 5=\text { Least } \\ & \text { Deprived } \end{aligned}$ | 128 | 13 | 10 | 10 | 11 |

## 5. Consumers of discretionary and additional foods and drinks

As shown in tables 3 and 4, the proportion of consumers of each individual category ranged from $6 \%$ (ready meals) to $54 \%$ (breakfast cereals). Therefore, intakes within consumers only will be greater than those presented for the total population. Tables 8 and 9 provide a breakdown of mean intakes and contribution of discretionary and additional categories to calories and macronutrients among adults consumers (16+y) living in Scotland, in 2021.

Among consumers, the mean intake from all discretionary foods was $74 \mathrm{~g} / \mathrm{d}$ (SD: $58 \mathrm{~g} / \mathrm{d}$ ), with an additional $299 \mathrm{~g} / \mathrm{d}$ (SD: $261 \mathrm{~g} / \mathrm{d}$ ) coming from sugar-containing soft drinks. On average, discretionary foods and drinks provided 301 kcal per day,
accounting for $18 \%$ of total energy intakes among consumers. This contribution rose to $19 \%$ and $21 \%$ of total fat and saturated fat intakes, and $44 \%$ of free sugars intakes.

The mean intake of additional foods among consumers was $151 \mathrm{~g} / \mathrm{d}$ (SD: $127 \mathrm{~g} / \mathrm{d}$ ), with $16 \%$ of total energy intakes coming from these foods, and $13 \%$ of total fat, saturated fat and free sugars intake.

Table 8: Mean intakes and contribution of discretionary foods and drinks to calories and macronutrients in adults (16+y) living in Scotland, in 2021 (consumers only)

| Food Group | \% consumers <br> in total <br> sample | Mean <br> intake <br> $(\mathrm{g} / \mathrm{d})$ | \% Total <br> energy | $\%$ <br> Total <br> fat | \% <br> Saturated <br> fat | \% Free <br> sugars |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Cakes, sweet pastries <br> \& puddings | $39 \%$ | 52 | 9 | 10 | 11 | 20 |
| Sweet biscuits | $46 \%$ | 33 | 9 | 10 | 13 | 21 |
| Confectionery | $31 \%$ | 33 | 9 | 11 | 16 | 29 |
| Crisps \& savoury <br> snacks | $33 \%$ | 27 | 8 | 11 | 3 | 1 |
| Ice cream \& ice lollies | $14 \%$ | 41 | 5 | 7 | 11 | 8 |
| Sugar-containing soft <br> drinks | $26 \%$ | 299 | 5 | 0 | 0 | 35 |
| Total discretionary <br> foods (excluding <br> sugar-containing <br> soft drinks) * | $\mathbf{8 2 \%}$ | $\mathbf{7 4}$ | $\mathbf{1 7}$ | $\mathbf{2 1}$ | $\mathbf{2 2}$ | $\mathbf{3 6}$ |
| Total discretionary <br> foods and drinks * | $\mathbf{8 6 \%}$ | $\mathbf{1 5 9}$ | $\mathbf{1 8}$ | $\mathbf{1 9}$ | $\mathbf{2 1}$ | $\mathbf{4 4}$ |

*Note: total discretionary food and drink values do not equal the sum of the individual categories within the consumer only analyses. This is because consumers do not necessarily consume across all categories.

Table 9: Contribution of additional foods to intakes of calories and macronutrients in adults (16+y) living in Scotland, in 2021 (consumers only)

| Food Group | \% <br> consume <br> rs in total <br> sample | Mean <br> (g/d) | \% Total <br> energy | \% <br> Total <br> fat | \% <br> Saturated <br> fat | \% Free <br> sugars |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Pizza | $11 \%$ | 160 | 21 | 21 | 23 | 13 |
| Ready Meals | $6 \%$ | 201 | 20 | 22 | 23 | 13 |
| Breakfast cereals | $54 \%$ | 84 | 10 | 5 | 4 | 10 |
| Roast potatoes, chips and similar <br> roasted potato products | $33 \%$ | 63 | 7 | 7 | 4 | 0 |
| Yoghurts, fromage frais and <br> dairy desserts | $29 \%$ | 83 | 5 | 6 | 9 | 11 |
| Total additional foods * | $\mathbf{8 2 \%}$ | $\mathbf{1 5 1}$ | $\mathbf{1 6}$ | $\mathbf{1 3}$ | $\mathbf{1 3}$ | $\mathbf{1 3}$ |

*Note: total additional food values do not equal the sum of the individual categories within the consumer only analyses. This is because consumers do not necessarily consume across all categories.

## 6. Limitations

There are several limitations associated with these analyses:

- Misreporting of food and drink intake is a known issue for all dietary surveys and studies of dietary intakes. Most often this leads to under-reporting where items are forgotten and unreported, or portion sizes are over/underestimated. Consequently, reported intakes likely subject to misreporting. As noted within Table 1, the average adult in Scotland consumed 1632 kcal per day. Similar to the value reported within the NDNS (1828 kcal per day), this is considerably lower than average energy requirements and improbable given the proportion of the population currently living with overweight and obesity.
- Similarly, differences in total energy intakes between demographic groups will influence the contribution individual categories make to overall intakes of calories and nutrients. For example, if overall energy intakes are low the contribution particular foods or drinks make to energy may be higher in some demographic groups than others even if mean intakes are similar. It should also be noted that, on average, men require more calories than women.
- Dietary estimates in this dataset are based on two days of diet recall. Given that some of these categories may not consumed daily, it is likely that some respondents may have consumed these foods and drinks outside of the surveyed period.. Future analyses of this dataset should consider adjusting for 'usual intakes' which can better reflect individual-to-individual variation of intakes within a group.
- These data have a high degree of variability, with a large proportion of non consumers included.
- No statistical testing to compare differences in intakes between categories and groups has been carried out. However, analyses has been conducted on surveyweighted estimates intended to be representative of the population in Scotland and therefore results are reflective of patterns of intake.


## 7. Discussion and conclusion

These analyses demonstrate that estimated intakes of total discretionary food and drink products represent $15 \%$ of average calorie intake, among adults (16+y) in Scotland. This increases to $28 \%$ when combined with the total additional food categories. These findings provide further support for action to reduce population intakes of HFSS foods and drinks.

The $15 \%$ from discretionary foods and drink, and $18 \%$ within consumers only, is lower than the $20 \%$ reported within previous estimations for 2018 which used data from the LCFS. This is likely due to a combination of factors, including differences in methodology, food and drink categorisation, different data years and limitations associated with under-reporting outlined above. For example, intakes derived from LCFS data are based on a methodology developed to convert food and drink purchase into dietary intakes whereas information on dietary intakes is collected directly within the SHeS using Intake24. Additionally, average overall energy intakes were found to be higher within the LCFS data.

In general, the results show that discretionary foods make the biggest contribution to energy and free sugars intakes within women and those in the oldest age groups whereas discretionary drinks accounted for the greatest share in men, younger people and those in the most deprived households. These findings also follow on from previous evidence on discretionary foods published by FSS in 2018 which highlighted the limited amount of these foods included as part of a healthy diet. Intakes and contributions to calories and macronutrients are even higher among consumers only.

Previous analyses conducted by Newcastle University using data collected as part of the 2018 pilot of Intake24 within SHeS (unpublished) reported similar findings to those presented in this report for discretionary foods. The findings on discretionary foods are also similar to data published for 2016/17-2018/19 within the UK National Diet and Nutrition Survey (NDNS). For example, the contribution of biscuits, puddings, buns, cakes, pastries and fruit pies, ice cream, savoury snacks, sugar and chocolate confectionery and sugar containing soft drinks to intakes of total energy within 19-64 year olds was $15 \%$. Similarly, the contribution of yogurt, fromage frais and other dairy desserts and breakfast cereals within 19-64 year olds was found to be $2 \%$ and $4 \%$ within the NDNS compared to $2 \%$ and $5 \%$ found for $16+$ years within this current report.

These findings are complemented by additional FSS analyses of overall dietary intakes by SIMD³, using 2021 SHeS data,. The report found key differences in intakes by SIMD, with diets of those living in the most deprived areas being generally lower in fruit, vegetables and fibre, and higher in energy density and red/red processed meat than those in the least deprived areas. Average total fat, saturated fat and free sugars intakes as a proportion of energy were similar between the most and least deprived groups. A key difference by SIMD found within this current report was in relation to sugar-containing soft drinks. Intakes of these drinks was highest among those living in the most deprived communities as was their contribution to free sugars intake.

[^2]Further analyses is required to understand the relative contribution of other food and drink categories to dietary intakes by SIMD.

Overall, these analyses provide an up-to-date view of intakes of the categories considered within HFSS promotions policy. The findings demonstrate that discretionary and additional foods contribute substantially to intakes of calories, fats and free sugars. In total, these categories contributed $28 \%$ to average intakes of calories, $28 \%$ to average intakes of total fat and saturated fat and $49 \%$ to average intakes of free sugars among adults in 2021. Given that diet in Scotland is too high in saturated fat and free sugars in particular, measures which improve the food environment to rebalance promotions towards healthier products would contribute towards achieving our Scottish Dietary Goals.

Improving our population's health by ensuring everyone can access healthier food and drink options food has never been more important. What surrounds us, shapes us and the food environment is a key factor which influences the daily food choices we make. Promotions can encourage us to buy more than we need, or to buy things we weren't intending to in the first place. When it comes to food, the "extra" amount that we purchase as a result of promotions can be as much as 18\%. FSS evidence shows that a considerable amount of our groceries are purchased on price promotions, such as multi-buys and price reductions ( $23 \%$ in 2021). They also feature when we buy food away from home, for example from restaurants, cafes and takeaways. Where an item is placed within a store, such as the entrance, check outs and end of aisles, also encourages us to put more in our baskets. Many HFSS foods are bought on price promotion, including discretionary items such as cakes, biscuits, pastries, savoury snacks, sugary drinks and alcoholic drinks and, overall, purchase is skewed towards less healthy products. Early reports suggest that initial placement restrictions in England are having a positive impact on reducing purchases of HFSS products, and are encouraging consumers to shift towards healthier options. This is extremely promising and provides further momentum for progress in this area to be made in Scotland.

These findings complement and add to existing evidence that monitors trends in food and drink intake in Scotland. This data will be used to support policy development, particularly in relation to restricting promotions of food and drink high in fat, sugar or salt, and also to inform public health communications and consumer advice.

## 8. Annex 1 : Detailed category definitions

| FSS <br> Category <br> Name | Food Codes (names) | Excluding food description code (name) | Including only food description code (name) |
| :---: | :---: | :---: | :---: |
| Sweet biscuits | - 7 (BISCUITS) | - 7649 (Bread sticks (e.g. Grissini)) <br> - 251 (Cheese biscuit (e.g. cheddars, cheese savouries)), (Mini cheddars) <br> - 252 (Cheese sandwich biscuits (e.g. Tuc cheese sandwich)) <br> - 3973 (Corn cakes/thins) <br> - 7650 (Cornish wafer) <br> - 8330 (Cracker, reduced fat) <br> - 258 (Crackerbread original (e.g. Ryvita)), (Melba toast) <br> - 256 (Crackerbread wholegrain (e.g. Ryvita)), (Crispbread Rye with or without seeds (e.g. Ryvita)), (Multigrain crispbreads (e.g. Ryvita)), (Ryvita thins) <br> - 255 (Cream cracker) <br> - 273 (Ice cream cone (no ice cream)), (Plain ice cream wafer (no ice cream)) <br> - 3267 (Japanese rice crackers), (Rice cake) <br> - 266 (Matzos) <br> - 267 (Oatcakes / Oat cakes) <br> - 3236 (Rice cake, savoury flavoured (e.g. Snack a Jacks)) <br> - 279 (Ritz / Saltines / Tuc), (Tuc crackers) <br> - 10062 (Savoury cracker (e.g. Sesame and poppy thins, butter puffs, onion crackers, monaco)) <br> - 11242 (Sunbites crispy crackers (crisps)) <br> - 274 (Water biscuit) <br> - 7652 (Wholemeal cracker (e.g. Farmhouse cracker)) |  |
| Cakes, sweet pastries \& puddings | - 8 (BUNS CAKES PASTRIES AND FRUIT PIES) <br> - 9 (PUDDINGS) | N/A | N/A |


| Crisps \& savoury snacks | - 42 (CRISPS AND SAVOURY SNACKS) | - 8033 (Coated and flavoured peanuts (e.g. Nobby's Nuts)) <br> - 8155 (Ryvita minis) | N/A |
| :---: | :---: | :---: | :---: |
| Confectionery | - 43 (SUGAR CONFECTIONERY) <br> - 44 (CHOCOLATE CONFECTIONERY) | - 7762 (Ice lolly) <br> - 2262 (Ice lolly, juice-based (e.g. Fruit pastilles) | N/A |
| Sugarcontaining soft drinks | - 57 (SOFT DRINKS NOT LOW CALORIE) <br> Note, this excluded fruit juices and teas/coffees with added sugar. | - N/A | N/A |
| Ice cream and ice lollies | - (ICE CREAM) <br> - (SUGAR CONFECTIONERY) | N/A | N/A <br> - 7762 (Ice lolly) <br> - 2262 (Ice lolly, juicebased (e.g. Fruit pastilles) |
| Breakfast cereals | - 6 (OTHER BREAKFAST CEREALS) <br> - 5 (HIGH FIBRE BREAKFAST CEREALS) | N/A | N/A |
| Yoghurt, fromage frais and dairy desserts | - 15 (YOGHURT FROMAGE FRAIS AND DESSERTS) DAIRY | N/A | N/A |
| Pizza | - (PASTA RICE AND OTHER CEREALS) | N/A | - 11511 (Vegetable pizza, takeaway/restaurant) <br> - 10029 (Meat pizza (e.g. Hawaiian, pepperoni, meat feast)) <br> - 10028 (Vegetable pizza, Vegetable pizza, stuffed crust, takeaway/restaurant,) <br> - 10030 <br> (Chicken pizza, stuffed crust, Chicken pizza) <br> - 10032 (Mixed pizza (e.g. chicken and |


|  |  |  | bacon), Mixed pizza (e.g. chicken and bacon), stuffed crust) <br> - 11514 (Meat pizza (e.g. Hawaiian, pepperoni, meat feast), stuffed crust, takeaway/restaurant) <br> - 11508 (Meat pizza (e.g. Hawaiian, pepperoni, meat feast), <br> takeaway/restaurant) <br> - 10026 (Cheese and tomato pizza (e.g. Margherita) <br> 11516 (Cheese and tomato pizza (e.g. Margherita), stuffed crust <br> takeaway/restaurant) <br> - 11512 (Mixed pizza (e.g. chicken and bacon) <br> takeaway/restaurant) <br> - 11509 (Chicken pizza takeaway/restaurant) 11510 (Cheese and tomato pizza (e.g. Margherita), takeaway/restaurant) 11512 (Mixed pizza (e.g. chicken and bacon), stuffed crust, takeaway/restaurant) <br> - 10031 (Fish pizza (e.g. with anchovies)) <br> - 11511 <br> takeaway/restaurant) <br> - 2743 (Lower calorie pizza (e.g. Delight, Leggera), vegetarian, takeaway/restaurant) 10033 (Cheese feast, loaded cheese, 4 cheese pizza) <br> 10034 (Meat pizza (e.g. Hawaiian, |
| :---: | :---: | :---: | :---: |



|  |  |  | - 6393 Chicken <br> and pasta ready meal <br> - 9328 Prawn <br> curry, ready meal, with rice <br> - 1356 <br> Cottage pie (beef), ready meal <br> - 8588 Vegetable bake, ready meal, Vegetable bake <br> - 5320 <br> Mousakka, ready meal <br> - 2734 Sweet and sour chicken, ready meal, with rice, reduced fat <br> - 9300 Spaghetti bolognese, ready meal, reduced fat (e.g. Weight Watchers) <br> - 5321 Shepherd's pie (lamb), ready meal <br> - 7094 Chicken korma, curry, ready meal, with rice <br> - 9318 Beef curry, ready meal, with rice <br> - 9270 <br> Fishermans pie/ocean pie, ready meal, Fish pie, toddler meal (e.g. Little Dish, Annabel Karmel) <br> - 1116 <br> Chicken/turkey roast dinner, ready meal <br> - 5627 Chicken curry, ready meal, with rice, reduced fat <br> - 8038 Sweet and sour vegetables with rice, ready meal <br> - 1352 Roast pork dinner, ready meal |
| :---: | :---: | :---: | :---: |


| Roast potatoes, chips and similar processed potato products | - 38 (CHIPS FRIED \& ROAST <br> POTATOES AND POTATO <br> PRODUCTS) | N/A | N/A |
| :---: | :---: | :---: | :---: |

## 9. Annex 2: Full data tables

Access the full data tables for discretionary and additional categories.


[^0]:    ${ }^{1}$ SIMD is a relative measure of deprivation. It looks at the extent to which an area is deprived across seven domains: income, employment, education, health, access to services, crime and housing. SIMD is the Scottish Government's standard approach to identify areas of multiple deprivation in Scotland. It is an area-based measure of relative deprivation: not every person in a highly deprived area will themselves be experiencing high levels of deprivation.

[^1]:    ${ }^{2}$ Total energy includes all energy derived from food and beverages, including from alcoholic drinks.

[^2]:    ${ }^{3}$ Report in preparation

