

Estimation of Food and Nutrient Intakes from Food Purchase Data in Scotland (2001-2018)

1. Introduction

This report provides an update on the Scottish diet with data up to 2018, and describes progress towards the Scottish Dietary Goals (SDGs). Results are calculated using a robust secondary analysis methodology developed to convert purchase data from the UK Living Costs and Food Survey to estimated dietary intakes.

This report follows on from the last report published in June 2018 which included data from 2001 to 2015.

2. Methodology

The Living Costs and Food Survey is an annual household budget survey which collects information on all household food purchases and eating out data over a 14-day period. It provides a valuable source of information about food purchases of the population, which can be translated into estimates of food consumption and nutrient intake.

Food consumption and nutrient intake in Scotland calculated in the previous reports (covering 2001 to 2015) has been updated by the addition of the years 2016, 2017, and 2018¹. Data since 2001 were combined for analysis in three-year blocks to allow for robust analysis.

Glossary Table

Term	Definition
Energy Density	Also known as calorie density, is the amount of calories in a specific weight of food, e.g. kcals per gram or per 100g.
Free Sugars	Sugars added to food or drink and those which are found naturally in honey, syrups, and fruit juices.
Discretionary Foods	Foods and drinks that are not required for a healthy diet, including confectionery, cakes, biscuits, pastries, savoury snacks, and sugar containing soft drinks. They should be only eaten occasionally and in small amounts.

¹ It should be noted that due to changes in the LCFS, these three years had a reduced sample size of households compared to previous years, however the sample was still representative of the Scottish population.

3. Results

3.1 Scottish Dietary Goals

In 2016-2018²:

- The average intake of red and processed meat was 55g per day, compared to the SDG of 70g per day. Intakes have significantly decreased from 65g per day since 2001-2003.
- The average intake of free sugars³ was 13.4% of total energy compared to the SDG of no more than 5%. Intakes have significantly decreased from 15.1% since 2001-2003.
- The average intake of fibre was 15.6g per day, compared to the SDG of 30g per day. Intakes have significantly decreased from 16.4g per day since 2001-2003.
- The average intake of total fat was 39.7% of food energy compared to the SDG of no more than 35%. Intakes have significantly increased from 38.8% in 2001-2003.
- The average intake of fruit and vegetables was 265g per day, compared to the SDG of 400g per day.
- The average intake of oil rich fish was 33g per week, compared to the SDG of 140g per week.
- The average intake of total carbohydrate was 44.3% of total energy compared to the SDG of 50%.
- The average intake of saturated fat was 15.4% of food energy compared to the SDG of no more than 11%.
- The average energy density of the Scottish diet was 172 kcal per 100g, compared to the SDG of 125 kcal per 100g.



² Significant differences were based on P-value for linear association ≤ 0.01 .

³ NMES figures provided as a proxy for free sugars.

Figure 1 – Mean food consumption and nutrient intakes in relation to the Scottish Dietary Goals from 2001-2003 to 2016-2018

2016 Scottish Dietary Goal		2001-2003	2016-2018	Change between 2001-2003 and 2016-2018	Progress towards SDG
Total Energy (kcal/day)	A reduction in calorie intake by 120 kcal per person per day	2126	1893	↓	N/A
Energy density (kcal/100g)	Average energy density of the diet to be lowered to 125 kcal/100g	171	172	No Change	Goal not met
Fruit and Vegetables (g/day)	At least 5 portions per person per day (>400 g/day)	256	265	No Change	Goal not met
Oil rich fish (g/week)	Increase to one portion per person (140g) per week	29	33	No Change	Goal not met
Red Meat (g/day)	Average intake of red and processed meat to be pegged at around 70g per person per day	65	55	↓	Goal met
Fat (% food energy)	≤35% food energy	38.8	39.7	↑	Goal not met
Saturated Fat (% food energy)	≤11% of food energy	15.6	15.4	No Change	Goal not met
Free Sugars (% total energy)	≤5% of total energy in adults and children over 2 years	15.1	13.4	↓	Goal not met
Fibre (g/day)	Increase in average consumption of AOAC fibre to 30g/day	16.4	15.6	↓	Goal not met
Carbohydrate (% total energy)	50% of total energy with no more than 5% total energy from free sugars	45.2	44.3	No Change	Goal not met



3.2 Estimated Consumption of Food Groups

- Consumption of cakes, sweet biscuits, and confectionery changed very little since 2001-2003.
- Consumption of sugar containing soft drinks significantly decreased to 138g per day in 2016-2018. In contrast, average intakes of sugar free soft drinks significantly increased to 158g per day.
- Total bread consumption significantly decreased to 81g per day in 2016-2018 however brown/wholemeal bread, high fibre and total breakfast cereal consumption remained fairly constant.

Figure 2 – Estimated consumption of food groups by three-year blocks, 2001-2003 to 2016-2018 (g/person/day)

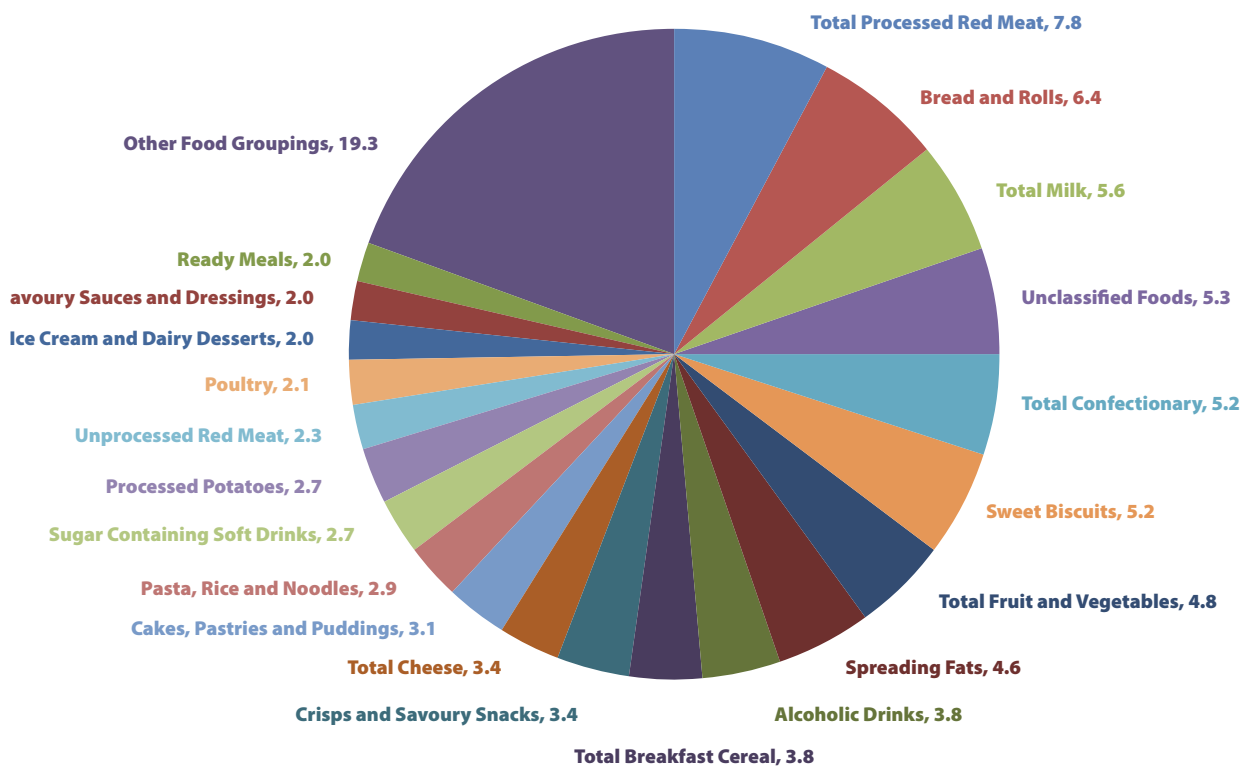
Food Group	2001-2003 Average Intake	2016-2018 Average Intake
Cakes, sweet biscuits and pastries	40	36
Total confectionery	23	22
Ice cream and dairy desserts	33	35
Sugar containing soft drinks	245	138
Sugar free soft drinks	104	158
Savoury snacks	15	13
Total bread	107	81
Brown/wholemeal bread	18	18
Total breakfast cereal	19	20
High fibre breakfast cereal	10	13



3.3 Contribution of Foods to Intakes of Energy, Fat, Saturated Fat, and Free Sugars

- Discretionary foods such as sweet biscuits, confectionery, crisps and savoury snacks, cakes, pastries and puddings and sugar containing soft drinks are significant contributors to energy in the diet. Sweet biscuits and confectionery in particular, are two of the top five contributors to energy, fat, saturated fat, and free sugars.
- These five food groupings contribute almost 20% of energy, fat, and saturated fat intakes, and more than 50% of free sugars intake.

Figure 3 - Percentage contribution of foods to total energy (2016-2018)^{4,5}



4 'Unclassified Foods' includes unspecified foods, mainly eaten out such as 'meal', 'school meal' or 'meal at work', and unspecified meals on wheels.

5 Other Foods Groupings' includes all food groupings not already listed contributing to less than 2% of energy.

4. Conclusion

Overall, over the 18-year period, there has been both progress towards and movement away from the SDGs.

In terms of progress towards the SDGs, red and processed meat consumption has significantly decreased and the SDG has continued to be met. There has also been a significant decrease in the average intake of free sugars, which may have some relation to the introduction of the Soft Drinks Industry Levy on 6 April 2018 as consumption of sugar containing soft drinks significantly decreased between 2016-2018. However average intakes of free sugars are still two and a half times higher than the recommended maximum. Significant decreases in red and processed meat and free sugar were also observed in the previous report.

In terms of movement away from the SDGs, there has been a significant increase in the % of food energy coming from total fat, and a significant decrease in fibre intake. These are new findings compared to the previous report.

Although there has been some progress towards the SDGs, intakes of fruit and vegetables, oil rich fish, total carbohydrate and dietary fibre remain too low and free sugars, total fats and saturated fats remain too high.

